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Original Articles.

AN EXPERIMENTAL AND CLINICAL RESEARCH INTO COCAIN AND EUCAIN.*

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EFFECT ON PERIPHERAL NERVE TRUNKS.

The injection of eucain or cocain into a nerve trunk so as to place all its structures in contact with the drug produces an effectual physiologic "block." By the word "block" is meant such condition of the nerve that neither afferent nor efferent impulses can pass, the conductivity being as completely interrupted as if the nerve were divided. While general anesthesia prevents the appreciation of pain and the production of voluntary motion, it does not prevent such other afferent impulses as those caused by mechanical, thermal or electrical stimulation of the nerve endings or trunks, which produce changes in the frequency and the amplitude of the respirations, in the frequency and force of the heart beats, and in vasomotor action. Either eucain or cocain injected into a nerve trunk as above described prevents the passing of such afferent impulses, thereby preventing effects upon the respiration, the heart or the vasomotor mechanism, i. e., shock. Under general anesthesia, if the paw of an animal is subjected to the flame of a Bunsen burner, after the lapse of a short time the leg is drawn up by the contraction of groups of muscles in a deliberate but rather forcible manner, removing the foot from the flame. General anesthesia, no matter how deep nor what anesthetic employed, does not prevent such action of the muscles. It seems, if the expression may be allowed, to be an "unconscious purposive" action. Either eucain or cocain injected into the path of these afferent impulses prevents this phenomenon. If it is intended to produce an immediate effect it is necessary to make a thorough injection. If a little time is allowed to elapse, the solution need not be directly injected into all the parts of the nerve trunk. Even if injected underneath the sheath, without penetrating the substance of the nerve trunk, a "physiologic" block may be produced. No unfavorable later effects were noted. In a number of cases in which the nerves were thus blocked, and the animals allowed to recover, there was but temporary functional impairment, and in no instance was there evidence of neuritis or of degeneration following. The effect of the eucain and cocain upon nerve structures is apparently the same as their well-known general effects upon the protoplasm; that is, they temporarily suspend its functional activity. They form no chemical combination and cause no destruction either of its physiologic properties or of its substance. As to afferent impulses, it was found that the cortical discharges of the brain were blocked either when they originated as a voluntary action, or when they originated as an artificial convulsion produced by the administration of the essential oil of absinthe. Even powerful electrical currents applied to the nerve trunk, near the block, were found to be incapable of forcing their impulses through the "block." What has been said of the effect of cocain thus applied to the nerve trunks may be said of like injections into the spinal cord. The effect upon the optic nerve is that of at least partially blocking the impulses of the light waves and were the injections given directly into this nerve the "block" would probably be complete. Either eucain or cocain when applied upon the medulla or fourth ventricle within a few seconds suspends the action of the respiratory center. This suspension is characterized by a gradually increasing slowness of respiration, together with gradually decreasing amplitude, so that within thirty seconds respirations cease. The blood pressure in nearly every instance suffers a profound depression, the nature of which is a gradual decline such as is observed on making a cross-section of the cervical spinal cord; that is to say, the vasomotor center or paths are anesthetized. Another effect of the application of eucain or cocain upon the medulla or the floor of the fourth ventricle is immediate complete general anesthesia and immediate total loss of all voluntary action. The corneal reflexes are at once abolished and the pupils are dilated. When the paws of the dog are exposed to the flame of a Bunsen burner the legs are not drawn up, the blood pressure is not altered, and the heart's action is not affected. It is needless to say that there are no respiratory changes. In other words, application of these anesthetics upon the medulla or the floor of the fourth ventricle suspends temporarily all the manifest functions of that organ excepting the heart's action, and that is modified. General anesthesia may be indefinitely prolonged by repeated applications. Upon the vagi the effect of an injection of these drugs is to suspend their inhibitory action. The action of cocain is probably a little more prompt than that of eucain; the latter, however, seemed to be quite as effective as the former. Cocain and eucain block the impulses set up by electrical stimulation in nerve trunks even after death; that is, if after the death of an animal a nerve trunk is stimulated, within a certain time the muscles supplied will be thrown into contraction; but if cocain or eucain is injected into the nerve trunk and a stimulus applied above it, no contraction will occur.

*The experimental research consisting of 89 experiments on animals, mostly dogs, will be published in detail elsewhere. This paper is a summary.

The physiologic action of cocain and eucain, both local and general, are so nearly alike that one description may serve for both. The first effect, observed after

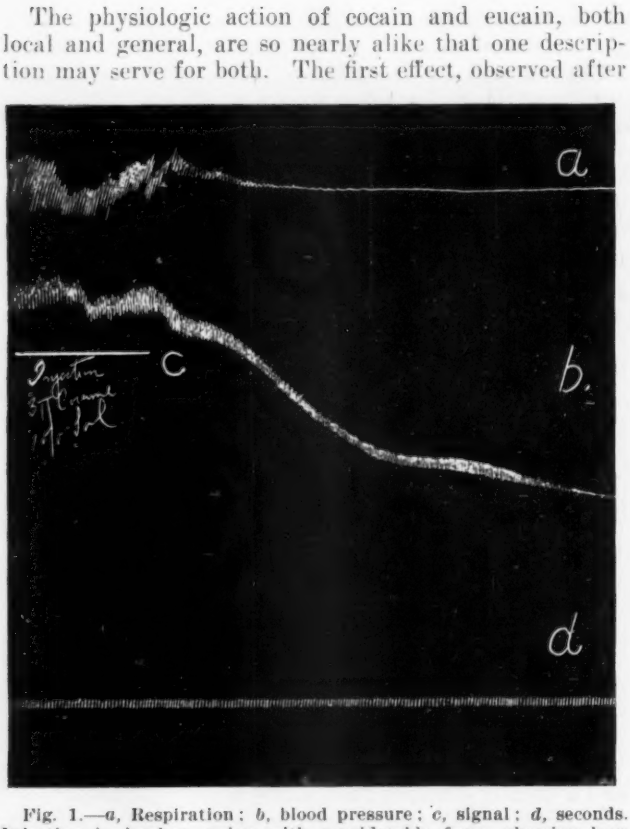

Fig. 1.—*a*, Respiration; *b*, blood pressure; *c*, signal; *d*, seconds. Injection in lumbar region with considerable force, showing how quickly both the respiratory and the vasomotor centers may be paralyzed. The secondary rise in the blood pressure was due to the first disturbance of the convulsive center in the medulla.

the intravenous injection, is a temporary increase in the blood pressure. This increase appears almost immediately, and continues for a brief period of from five to twenty seconds, when the blood pressure returns to or near its former level. The heart strokes forming the curve are usually a little shorter, and the rapidity of the heart's action somewhat increased. No definite vasomotor change was indicated by the peripheral venous or peripheral arterial manometers. A water manometer recording the splanchnic blood pressure indicated a rise out of proportion to the rise in the general blood pressure. In rare instances there was a fall in the blood pressure, but compensation was immediately inaugurated and the lost pressure was quickly regained. In overwhelming doses with lethal effect the general blood pressure, in fact, all the pressures, rapidly sink to the abscissa line. It was noted that when the animal was under the systemic effect of these drugs the blood pressure curve was, as a rule, not so regular as under normal conditions. It was also noted that in a number of experiments the length of the stroke of the writing style, expressing the heart's action, was shortened under the systemic effects of these drugs. This irregularity of the blood pressure curve was similar to the irregular curve when the animal was under physiologic dosage of atropin or when both vagi had previously been severed. It was also found that when animals were under the effect of these drugs, stimulation, by applying the electrodes upon the vagi, did not produce normal characteristic effect; that is to say, that while in normal conditions the application of a Du Bois Reymond electrode upon the vagi causes slowing or arrest of the heart; in animals under the systemic influence of cocain or eucain the application of such stimulation to the vagi in most instances produced little or no effect. In a number of experiments it was observed that after having secured a control tracing of the inhibitory effect of intralaryngeal manipulation the animal was subjected to a physiologic dosage of cocain or eucain, and like manipulation of the larynx usually produced no inhibition. In the experiments in which inhibition was noted it was in most instances less than normal. The same may be said of other experiments upon the superior laryngeal nerve. The physiologic effect of cocain and eucain in this respect is quite analogous to that of atropin, though the effect is not so marked. The increase in the blood pressure after the administration of cocain is in a measure similar to that which follows section of both vagi. Taking into consideration all of the evidence, it would seem that cocain and eucain partially or wholly suspend the inhibitory function of the vagi, whether produced by direct or indirect stimulation. While not prepared to make a positive statement on the subject, it appears that the increased rapidity of the heart's action under the influence of these drugs was due to the removal of the vagal influence and not to

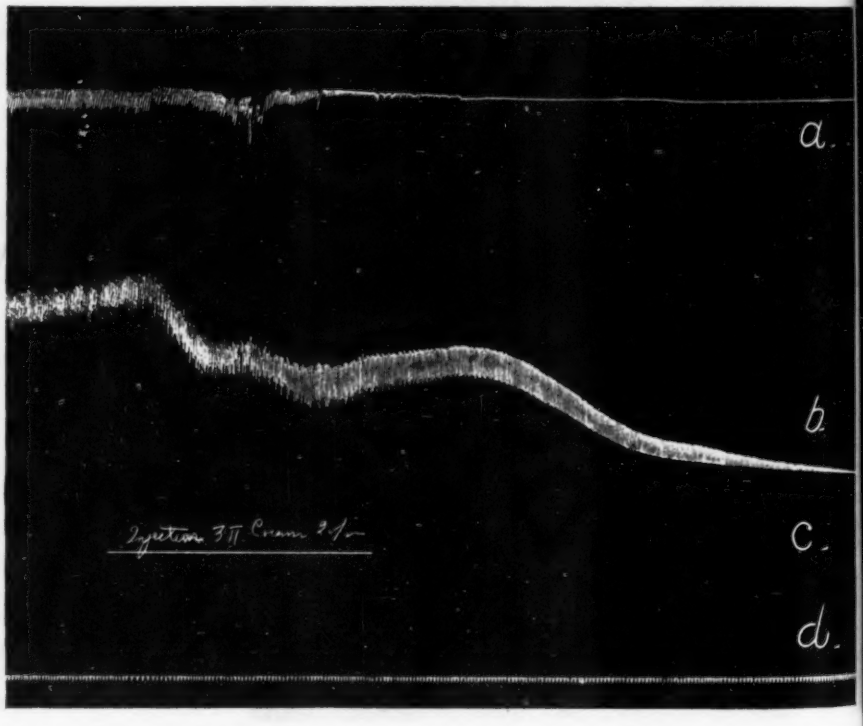

Fig. 2.—*a*, Respiration; *b*, blood pressure; *c*, signal; *d*, seconds. Effects of injecting two drams of cocain into lumbar subarachnoid space. Note the gradual cessation of respiration, the irregular strokes occurring during the convulsions, the abrupt fall in the blood pressure due to paralysis of the vasomotor center in the medulla.

stimulation of the accelerators. The splanchnic area, especially the veins, when the abdominal viscera were subjected to exposure or irritation, or both, was dilated.

the intestines became red, extremely congested, and often livid. When the animal had been given a physiologic dose of cocain or eucain and exposed to like experiment the splanchnic vessels did not dilate, except-

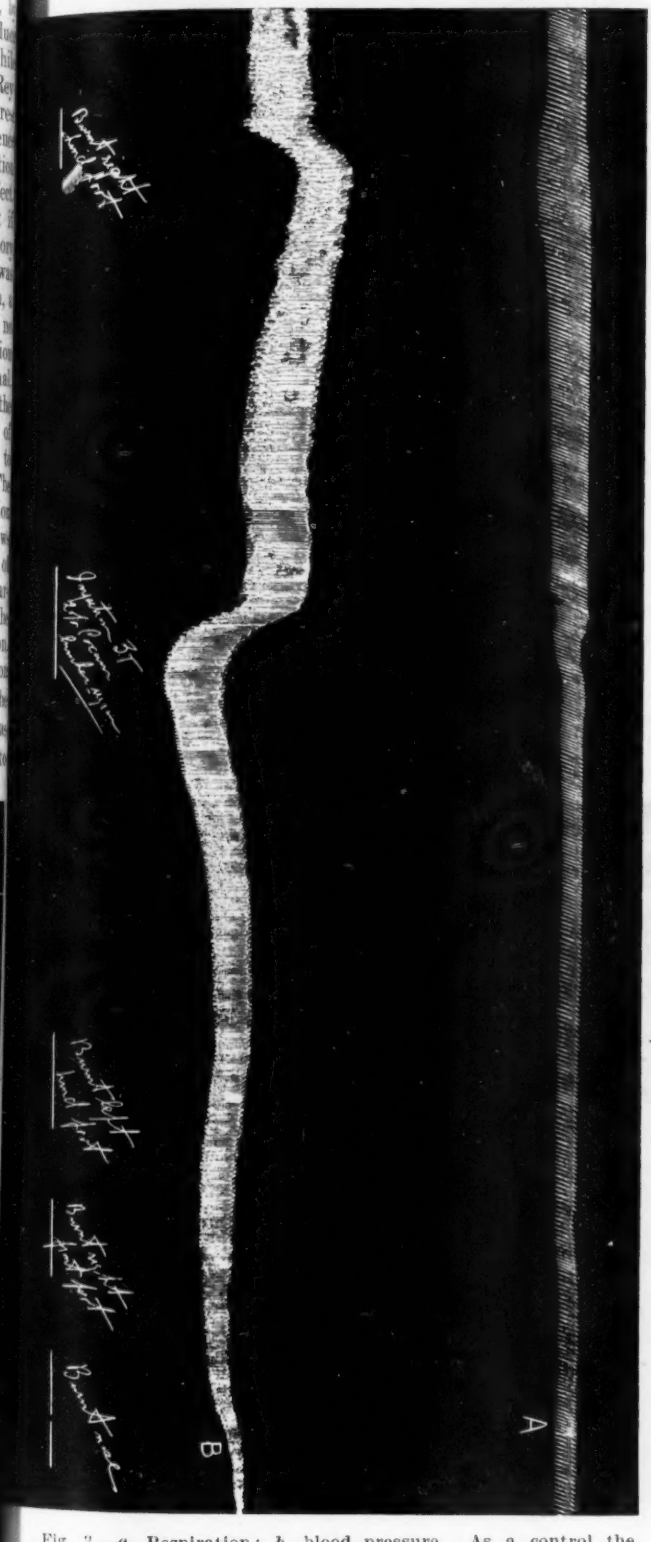

Fig. 3.—*a*, Respiration; *b*, blood pressure. As a control the hind foot was burned, causing a rise. Then cocain solution was injected into lumbar region, after which burning of the foot caused no effect upon either the blood pressure or the respiration.

ing those at the bases of the intestines. The arteries became decidedly smaller and the intestines a peculiar pallish red. In a large series of control experiments it was found that with but rare exceptions such irritation or exposure of the splanchnic area caused a fall in the general blood pressure proportional to the exposure or irritation and the condition of the animal. In some instances the fall was extremely rapid and the animal soon died, but in a series of experiments in which cocain was systematically administered there was but a slight, if any, fall in the general blood pressure. There was a striking difference between the results in the control experiments and the "cocain" ones. In order to make the comparisons more reliable double experiments were performed. Two animals of as nearly the same size and under as nearly the same conditions as possible were placed side by side on similar dog boards, and precisely the same experiments were performed simultaneously upon each. In every instance the benefit of any doubt was allowed the control dog. The writing style recording the blood pressure and the respiratory action of each was placed in a vertical line, so that direct comparisons could be accurately made. The result of these double experiments may be summarized as follows: In the control dogs exposure and manipulation of the intestines produced a fall in the blood pressure; in the cocain and eucain dogs, as a rule, no fall occurred. The cocain and eucain dogs endured more mechanical injury than the control dog. The latter in every experiment died first. In burning the hind feet in the animals the blood pressure in the control rose higher and more promptly than in the cocain or eucain dogs. In crushing the testicle the blood pressure fell more promptly and a greater distance than in the cocain or eucain dogs. The same may be said of the manipulation of the larynx, stimulation of the vagi, operations in the pharynx, in short, of every portion of the body. The comparison between the appearance of the abdominal viscera in the control dog and that in the cocain or eucain dog is that in the latter the intestines were of a peculiar shade of pale red, and the vessels were, if any change was noted, of less caliber than before the experiment; while in the control dog all the vessels were engorged, the viscera exceedingly red, and in many instances livid. It was at once apparent that the difference in the blood in the splanchnic area of these two animals was very great. Even the inferior vena cava was smaller in the cocain animals. The effect upon the circulatory apparatus: first, an immediate rise takes place in the blood pressure lasting a few minutes; this is followed by a compensatory fall; later, a gradual rise occurs. The inhibitory influence of the vagus is partially or wholly suspended. The vasomotor reflexes are considerably lessened. The circulatory apparatus is less responsive to stimulation. The latent period of vasomotor reflex action is markedly increased. The vessels of the splanchnic area are contracted.

There is but little doubt that there is an increased tendency to clotting. Upon the respirations a small dose seemed to act as a stimulant. A medium dose seemed to lessen the length of the respiratory stroke, while a large dose caused respiration to gradually diminish. It was frequently observed that if a series of injections of these drugs were administered at given intervals a very marked tolerance was acquired, so that finally but little effect could be produced. It was also observed that animals under the influence of these drugs were more difficult to maintain in the condition of even surgical anesthesia. More general anesthesia seemed to be required, and the animals had a tendency to come unexpectedly out from its influence.

SPINAL CORD ANESTHESIA.

Injection into the Spinal Cord.—In 1897, after performing the experiments upon nerve trunks showing that cocain was capable of producing physiologic section, that is to say, the afferent or efferent impulses could not pass the point cocainized, and after having performed amputations on the human subject without pain and without shock by this method, similar procedures upon the spinal cord were suggested. The experiments along this line consisted in injecting the solution directly into the substance of the cord. This produced immediate anesthesia at all the points with which the cocain came in contact. Although the anesthesia was immediate and complete, and for operative purposes was entirely satisfactory, it was obvious that this procedure necessitated a physical damage to the cord.

Recovery experiments were made as follows: The cord was anesthetized by injecting cocain directly into its substance by means of a fine needle. The completeness of the anesthesia was proved, the animal allowed to recover, and after a lapse of varying periods of time was killed. The cord was subjected to microscopic examination. While in some of the cases it was impossible to detect any microscopic damage to the cord. there was found some round-celled infiltration and disturbance of the histologic arrangement. It was at that time concluded that this was not a justifiable procedure in any but most exceptional cases. Later experiments were made by injecting cocain into the subarachnoid space. In dogs this space is so small that it is necessary to expose the cord in order to make an injection without traversing the cord. The injection of a 1 per cent. solution of cocain into this space produced almost immediate anesthesia.

Subarachnoid Injection.—Effect on the Circulation: The effect of injecting a solution of cocain into the subarachnoid space in the lumbar region was an immediate fall in the blood pressure, the beginning of the fall being almost coincident with the contact of the solution of cocain with the cord. The depth of the fall was proportional to the completeness and the anatomical parts involved. The curve in the descent of the blood pressure was gradual and even, after which a regular line was maintained for some distance, which indicated the loss of vasomotor control. The effect upon the blood pressure when the medulla or the fourth ventricle was cocainized was the greatest, the pressure falling almost to the abscissa line. When the entire cord had been subjected to the influence of cocain and the pressure had fallen as above described, if any part of the body below the level cocainized was subjected to burning, crushing, or any other mechanical, thermal or electrical stimulation, no rise in the blood pressure occurred. There was usually but a trifling amount, if any, of compensation after the fall of the blood pressure until the cocain effects passed off.

Effects on Respiration: The immediate effects on the respiration, after a subarachnoid injection of a comparatively small amount of cocain in any part of the spinal cord, not involving the medulla, is acceleration. The application of a 1 per cent. solution of cocain upon the medulla or the floor of the fourth ventricle produced within a period of time ranging from a few seconds to a few minutes, complete respiratory paralysis. There is first loss of the intercostal and extraordinary muscles, then the abdominal muscles and lastly the diaphragm. The action of the diaphragm becomes shallower at each contraction until it is entirely paralyzed.

The membranes of the cord are so nearly inelastic that for the present purpose they may be regarded as being so, while the cord itself is so nearly incompressible that it may be considered so. The subarachnoid space is always filled with its own fluid. If additional fluid is added, it must cause a displacement similar to that of fluid in a capillary glass tube. The rapid and uncontrollable ascent of the anesthesia of the cord was most striking. In order to better study this a series

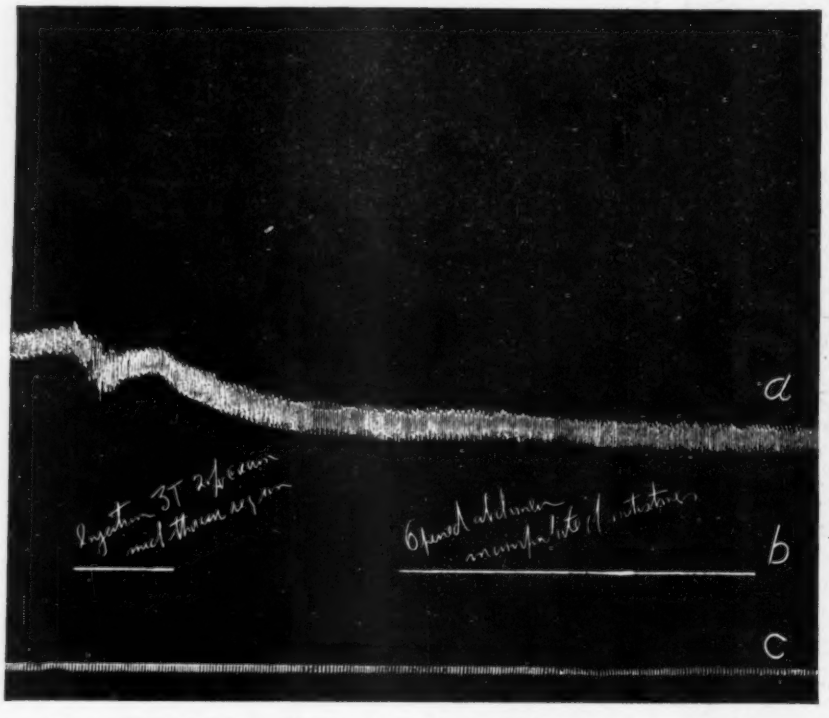

Fig. 4.—*a*, Blood pressure; *b*, signal; *c*, seconds. This experiment shows that after an injection in the thoracic region manipulation of the abdominal viscera does not affect the blood pressure.

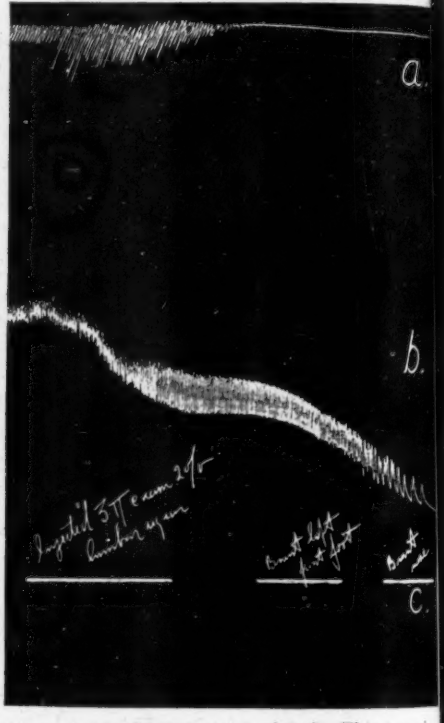

Fig. 5.—*a*, Respiration; *b*, blood pressure; *c*, signal. This experiment shows how quickly an injection in the lumbar region may kill, and that after the effect is obtained burning of the feet does not produce any change in the blood pressure.

of injections was made with cocain solution colored with methylene blue. It was found that an ordinary injection in the lumbar region of one-half dram of this solution stained the entire cord and the under surface of the brain within thirty seconds. All the various localized functions of the cord and medulla were with rapidity anesthetized. The respiratory center in the medulla, for example, could be anesthetized by a lumbar subarachnoid injection within a few seconds, so rapidly did the fluid pass up the cord. Marked fall in the blood pressure and cessation of the respiration occurred within a few seconds, after a rather forcible injection in the lumbar subarachnoid space. The fluid ascended about as readily in the vertical posture as in an horizontal. There can be but little doubt that the effect is due to the local contact of the nerve structure and not to absorption. This view is in full accord with the action of cocain on other nerve tissue. A solution injected with

Fig. 6.—Showing the most accessible portion of the anterior crural nerve.

considerable force into the lumbar subarachnoid space was attended immediately by convulsions. The convulsions were due to the stimulation of the convulsive center in the medulla. The dosage used in these experiments was purposely made large to determine the control, or rather the want of control, the operator could have upon the extent of the anesthesia. In control experiments in which normal saline solution was injected into the spinal cord an immediate fall in the blood pressure occurred, but compensation quickly followed. The respirations were but slightly affected. There was the most striking difference between the overwhelming paralysis in the one case and the want of it in the other. The experiments showed that the operator has but little control over the extent of the anesthesia produced under the subarachnoid injection. While direct injection into the cord gave a complete control of the extent, it produced a distinct mechanical lesion. In the clinical reports of the subarachnoid anesthesia these experimental data have been corroborated. This was most strikingly exhibited in a case described by Fowler in which the anesthesia during three minutes extended up to the level of the clavicle, at which time the patient became cyanotic and artificial respiration was necessary. Other observers have noted the marked effect on respiration, the lowered blood pressure, and the rapid pulse, the latter indicating that the cocain solution was affecting the centers of the medulla. In 692 reported cases there were six deaths that were attributable to the anesthesia, a mortality rate at least fifty times greater than that of chloroform.

CLINICAL APPLICATION OF THE EXPERIMENTAL EVIDENCE.

Operations on the Extremities.—Leg: The "blocking" method was employed independently by Dr.

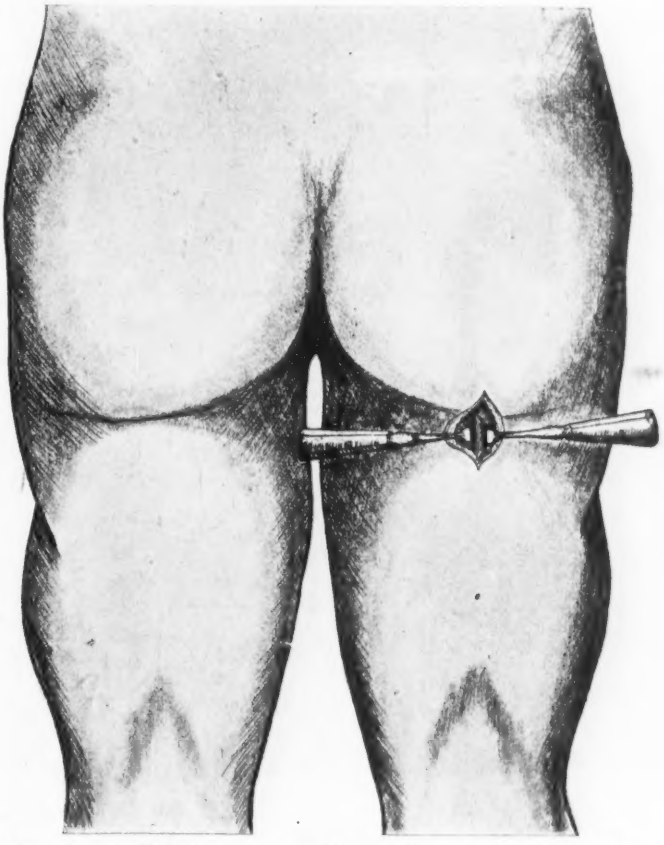

Fig. 7.—Showing the most accessible portion of the sciatic nerve.

Rudolph Matas of New Orleans, of which his brilliant monograph on anesthesia gives a full account. Applying the so-called physiologic "blocking" properties of cocain or eucain to surgical practice, we have been enabled to perform certain operations upon the extremities without causing pain and shock by injecting a 1 per cent. solution of cocain into the supplying nerve trunks. The external cutaneous nerve is so superficial that it is readily accessible. The anterior crural is readily exposed in its relations with the artery, and the sciatic at the margin of the gluteal fold along the inner border of the biceps muscle. In operations performed upon the area supplied by the "blocked" nerve trunks the afferent impulses can not reach the central nervous system. There is, therefore, neither pain nor shock. This method is of the greatest possible importance in operations in which general anesthesia is contraindicated. The operation under these circumstances can cause no more shock than if the member had no connec-

tion with the body, as the "block" for such purposes is equal to a physiologic amputation.

In this manner I have five times performed amputation of the leg below the knee, and in all but one the patient was not aware that the operation was performed until told of it afterwards. It is necessary to control the patient well. After preliminary preparations have been made, the patient's attention should be diverted. I have usually said that an examination and a dressing would be made requiring considerable time, and that the operation would be performed next day. In the meantime the eyes were covered. In the one case the patient became aware of the progress of the operation by hearing the noise of the saw while dividing the bone. The "block" continues from twenty-five to thirty minutes. The clinical observations are in entire accord with the experimental evidence.

Operations in the Area of the Distribution of the Ulnar Nerve: The superficial position of this nerve at the elbow joint enables the surgeon to apply a cocain or a eucain "block" almost painlessly by inserting a hypodermic needle, first into its close vicinity, then into the trunk itself, injecting the solution on its way. After the lapse of ten minutes the entire area supplied will be rendered anesthetized, and if the patient's attention is diverted operative procedures, such as amputations and resections, may be performed painlessly and without the patient's knowledge.

Fig. 8.—Point of election in making the incision for exposure of the subclavian artery and the brachial plexus.

CASE 1.—A railway employe, whose hand and little finger were severely crushed within the area of the distribution of the ulnar nerve, required amputation and revision. Bending the elbow, a wheal was produced by injecting a 1/12 per cent. solution of beta-eucain, thereby creating a painless path to the nerve trunk, which was then anesthetized. In a few seconds there was complete anesthesia, and the finger and the corresponding metacarpal bones were removed while the patient was an interested spectator. The night following this operation the patient complained of a burning sensation over the distribution of this nerve. There was some local tenderness at the point of injection, but this disappeared after several days.

CASE 2.—A small boy discharged a pistol, which took effect in the ulnar side of the hand, tearing away the soft parts and a portion of the fifth metacarpal bone. By "blocking" the ulnar nerve at the elbow the wound was examined, and the fragments of the bone removed without pain. In this case there was no complaint of the burning sensation described in the preceding. The wound healed readily.

CASE 3.—In a tuberculous patient a local focus appeared at the metacarpal-phalangeal joint. In performing an operation for the removal of this focus, the ulnar nerve was "blocked." At first an attempt was made to secure anesthesia by injecting the solution around the nerve, but after waiting five minutes it was found that anesthesia was only partial and that it was necessary to inject the nerve itself. In performing the operation it is best to fix the nerve well against the bone and insert the needle gradually as anesthesia occurs in advance of the needle. After such an injection the anesthesia was complete and the operation was performed painlessly. The patient complained of some burning the first night, but the second day it decreased and was not again experienced.

In two other cases this nerve was in a similar manner "blocked." In each the anesthesia was complete in five to ten minutes and no after-effects were noted. In no case was there any interference with the function of this nerve in consequence of the injection. Neither did the points at which the injection was made remain tender. No neuritis followed.

Fig. 9.—Showing the point of election for exposing the subclavian artery and the brachial plexus.

Amputations at the Shoulder Joint.—Amputations at the shoulder joint are usually indicated on account of a serious accident or disease, and in consequence such operations are frequently performed under unfavorable circumstances. There has been considerable mortality following this operation, even under the more favored conditions. In operations for malignant disease in the aged, and operations in the presence of profound depression or shock, general anesthesia adds seriously to the danger. There are many instances of contraindication to the use of general anesthesia. A method by which this operation may be performed without general anesthesia, without shock and without hemorrhage, was devised in accordance with the experimental evidence

forth in the preceding pages, and put into practice June, 1898.

Technique: The technique is based upon the fact that ve trunks may be safely and effectually subjected a physiologic "block" by injecting cocain or eucain a comparatively weak solution, and that arteries may with entire safety, temporarily closed without injurg their walls. Fortunately, in the application of se principles. in amputation of the shoulder joint subclavian artery is in close surgical relation with brachial plexus so that the same incision may be ilized for exposing the nerve and the blood supply.

CASE 1.—Female, aged 74, was suffering from sarcoma of arm, situated in the lower third and extending well down the elbow. There was a metastatic growth in the axilla. She was suffering great pain and the tumor was growing

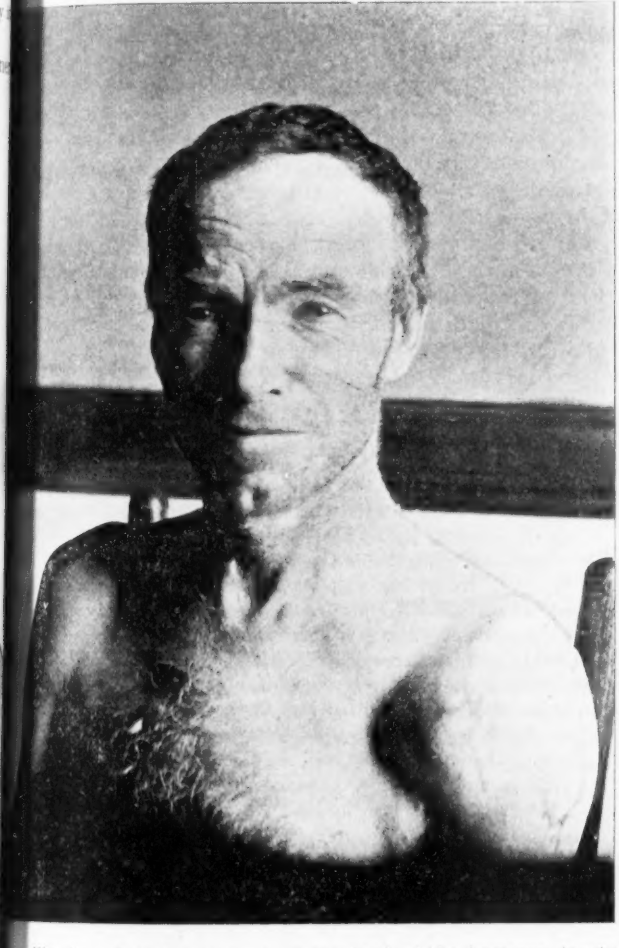

Fig. 10.—Showing sarcoma of the head of the humerus, involving the scapula.

rapidly. Owing to her extreme age, an amputation at the shoulder joint by the methods hitherto in vogue, giving a general anesthesia without "blocking" the nerve trunks to protect her against the afferent impulses caused by the mechanical irritation of the amputation and thereby producing shock, would have been a risk too great to assume. It was decided to perform the operation by employing the technique above described. An incision was made along the outer border of the sternomastoid muscle under 0.1 per cent. infiltration cocain anesthesia. The incision was carried through the superficial and the deep fascia, exposing in the first part of the incision the external jugular vein. The lower part of the incision was carried well down on the clavicle. The omohyoid muscle was retracted downward, the anterior angle of the trapezius backward and the posterior margin of the scalenus anticus forward, thereby exposing the trunks of the brachial plexus, and by extending the dissection a trifle farther downward and inward the arching subclavian artery was brought into the field. In making this dissection it is important to keep the field of the operation entirely free from blood, so that the translucency of the tissue will permit the ready recognition of the anatomic structures in their minutest detail. It will then be possible to detect small nerve twigs before they are encountered and enable the operator to subject them to local anesthesia in advance. In this way the area supplied by these branches may be anesthetized. The small vessels may be caught with narrow-bladed forceps, between which the incision may be carried. The smaller nerve twigs are usually found running along the blood vessels or in the connective tissue planes. It was observed in this dissection that in the deeper structures the sensory nerve supply is not so abundant as in the more superficial. After exposing the trunks of the brachial plexus, there being but a slight amount of pain in the dissection, they

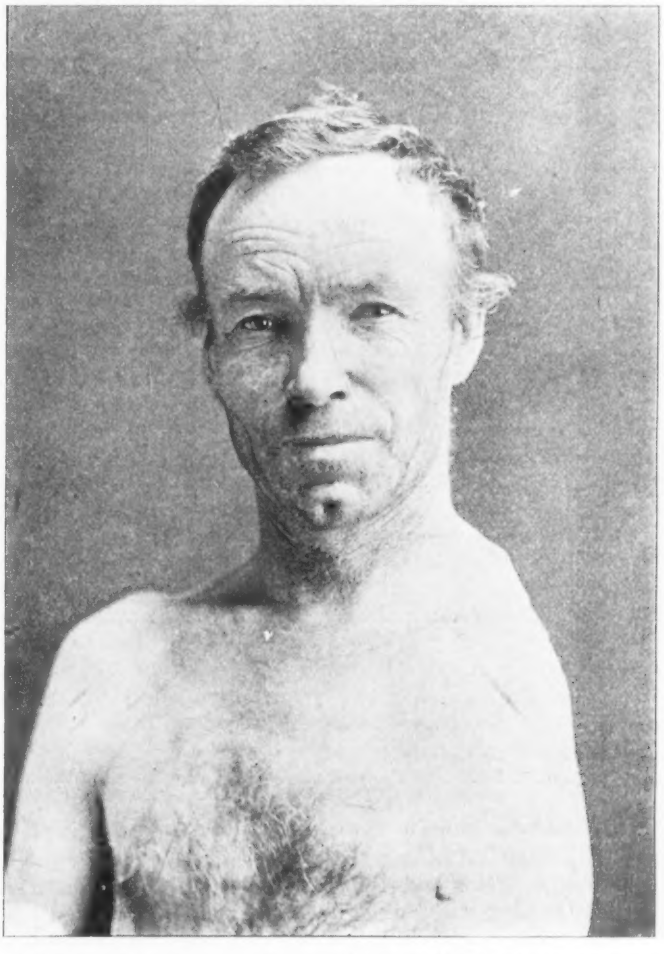

Fig. 11.—Patient upon whom excision of the left half of the shoulder girdle was made.

were subjected to a physiologic blocking by injecting first on their outer covering, then into their substance, a 0.5 per cent. solution of cocain, just sufficient to cause a localized swelling. It required but a small amount of solution. After injecting each trunk there was a total loss of sensation and of motion in all the parts supplied by the brachial plexus. The subclavian artery was then closed by means of a special clamp, over the blades of which rubber tubing was drawn. The blades were then approximated by adjusting the screw sufficiently to close the lumen of the vessel. The patient was then told that the operation would not be performed at that time, but would be deferred until the next day. A towel was thrown over her eyes, and under the pretext of making a careful examination of her arm the amputation was made without her knowledge. The flap on the outer and posterior aspects over the deltoid was made rather low, because of the sub-

cutaneous distribution of the branches of nerves from the cervical plexus, which, of course, had not been included in the physiologic block.

She experienced no pain except a slight one as the incision was carried around the posterior surface of the upper portion of the arm supplied by the supra-acromial nerve. The pain was, however, comparatively slight and was felt only during the incision of the skin. During the disarticulation the patient was not aware that she was being touched. After the operation had been completed it was found that there was absolutely no shock and that the operation had made no appreciable impression on her. The vessels were all picked up and tied before releasing the clamp from the subclavian. The total amount of cocain used in the operation was about 1/8 grain. A portion of this amount was recovered by sponging away the free solution in the wound. When the patient was returned to her bed she was not aware that her arm had been removed. She soon missed it, and manifesting some excitement, was informed by the nurse. She experienced some pain for a few hours after the operation and vomited several times the first night. She made a good recovery from the operation and there was nothing in the after-progress of the case different from operations performed in the usual way.

CASE 2.—Amputation of the arm at the middle was performed by the same technique as the preceding without producing any pain and without the slightest shock. Patient made a good recovery. The operation was performed on account of moist gangrene of the forearm in a patient having advanced pulmonary tuberculosis.

Amputation of Half the Shoulder Girdle.—This operation has been performed a number of times by various methods. The purpose of discussing it is to point out a technique by means of which hemorrhage and shock may be wholly avoided. Under general anesthesia an incision is made over the clavicle and the inner half of this bone is resected, after which the subclavian vein and the trunks of the brachial plexus are exposed. The trunks are then subjected to a physiologic block of cocain and eucain in comparatively weak solution, say 0.5 per cent. The brachial plexus is next severed and the artery and vein closed by ligature. The incision for the further technique in removing the scapula will vary with the object for which the operation is done. The amount of shock will be limited to what will be produced by making the incision through the structures supplied by the nerves from the cervical plexus, which is almost nil.

Observations on the Pharynx.—Clinical experience, as well as physiologic experiments, have demonstrated that when the pharynx is subjected to a considerable manipulation, especially that portion nearest the glottis, reflex inhibition both of the respiration and of the heart may occur. The respiratory inhibition is the more frequently produced. In the cases in which manipulation required considerable force the heart may be inhibited, causing collapse. I have observed this reflex inhibition of both the heart and the respiration in removing a tumor of considerable size from the nasopharynx. In operations for removing adenoid growths from the nasopharynx these phenomena have also been observed. In extracting large foreign bodies collapse may be produced. Not infrequently, in performing difficult operations in this portion of the pharynx, reflex inhibition confuses the operator. The respiratory inhibition is likely to give the impression that the patient is suffering from a mechanical obstruction. The inclination might be to clear out the upper respiratory passage, but this additional irritation would increase the symptoms. In the experiments it was found that reflex inhibition in this area may be prevented by the local application of a 2 per cent. solution of cocain. The solution may be as weak as an 1 per cent., or even a 0.5 per cent., and be effectual. A hypodermic injection of atropin prevents reflex inhibition of the heart. In cases necessitating the removal of adenoid growths and tumors of the pharynx the efficiency of these drugs was proved. It is advisable, before beginning the technique of an operation involving this area, to make a local application of a solution of eucain or cocain, and a hypodermic injection of atropin, to prevent reflex inhibition. If during an operation inhibition does occur, the distinction between inhibition and obstruction must be borne in mind, for if the case is one of obstruction there will be increased respiratory efforts, but if it is a reflex inhibition respirations instantly cease. In obstruction the pulse continues unaltered for some time before it becomes markedly slower. In reflex inhibition the pulse is instantly and markedly slowed or arrested.

Laryngotomy.—Not infrequently in this operation the moment the larynx is opened the patient goes into a state of collapse from which he may not recover. This operation is more frequently performed on children, oftentimes in great haste, under the stress of circumstances. If the operation is performed through the cricoid, collapse at the moment of entering does not occur. If made higher, it is very likely to occur, the reason being that in the higher operations the inhibition area of the larynx is mechanically stimulated. This causes a reflex inhibition, as in operations upon the pharynx. The superior laryngeal nerves are endowed with very strong inhibitory functions which are more active in the upper part of the larynx. The clinical observations are in entire accord with the experimental evidence.

CASE 1.—Dr. M. called in a colleague to aid in performing a laryngotomy upon a child who had a grain of corn in the larynx. The operation was successful until the larynx was opened, when suddenly collapse occurred, resuscitation seeming impossible. During the first stages of the collapse the corn was removed. Artificial respiration was maintained for a time though life seemed extinct, when suddenly respirations began and there was an uneventful recovery.

CASE 2.—I was called to see a child 3 years old having a large bean lodged in the larynx. The history of the case was that while playing the bean, in a fit of laughter, was inspired into the larynx. Paroxysms of coughing followed, occurring at intervals. Each time the child stopped breathing, it became cyanotic and apparently dead. After a brief interval respirations returned, another paroxysm soon followed with a repetition of the collapse. From these symptoms alone the location of the bean was diagnosed as being in the upper part of the larynx. An operation under local anesthesia was performed. The incision was made through the cricoid cartilage, below the so-called inhibition area, and the laryngeal mucosa was treated with a 2 per cent. solution of cocain, after which the larynx could be readily explored, the bean located and removed without inducing reflex inhibition.

Cases might be multiplied, but the foregoing are typical. The difference between reflex inhibition and obstruction is very marked. Reflex inhibition can not be produced by a foreign body at any point below the so-called inhibition area of the larynx. The importance of the use of local anesthesia, to prevent reflex inhibition in laryngeal operations, can not be overstated.

In all the operations upon the larynx, especially in laryngectomy and intralaryngeal procedures, the use of cocain and eucain is of the greatest importance. In laryngectomy especial attention has been called to the

collapse that not infrequently appears while removing the larynx from its attachments.

Bardenhauer encountered this three times in one case while inflating the Trendelenburg apparatus. In intubation sudden death frequently occurs, the collapse being due to reflex inhibition of either the respiration or the heart, or both. Cocain or eucain applied to the mucous membrane wholly prevents such reflex inhibition. If such local application can not be applied, all the necessary arrangements for the maintenance of artificial respiration may be made in advance. A hypodermic injection of atropin will prevent the cardiac inhibition, so that, without the use of local anesthesia, atropin with artificial respiration, may be depended upon to carry the patient over the inhibition crisis. In 156 intubations, I have encountered reflex inhibition six times, twice fatal, and they occurred before the nature of the inhibition was comprehended. Since making use of the experimental data, no case has been lost from reflex inhibition or "laryngeal collapse."

Death can not occur as a result of reflex inhibition if a preliminary hypodermic of a physiologic dose of atropin is given. The use of cocain is not practical in intubations for diphtheritic stenosis.

CLINICAL SUMMARY.

In the clinical use of cocain and eucain particular attention is called to a most important feature, viz., that shock is almost wholly avoided, because all afferent impulses are blocked. It is now known that afferent impulses set up by injury or operation are the causes of shock. These impulses are but slightly modified by general anesthesia. The afferent impulse, constituting pain, is abolished by general anesthesia, but those affecting the vasomotor, the respiratory, and the cardiac mechanisms are not controlled; but cocain or eucain absolutely blocks their passage, making a physiologic amputation of the part. These anesthetics wholly prevent reflex inhibition, the principal causes of collapse in certain operations and injuries, e. g., operations on the larynx and pharynx. Given hypodermically, the experimental evidence shows that they diminish shock in operations on the splanchnic area and absolutely alter this area in the processes of operation or exposure, as abundantly proved by the series of double experiments.

I have had but two opportunities of testing this clinically, both in operations for gunshot wounds of the intestines, and in each the experimental evidence seemed to be corroborated. Comparative results require such a large number of observations that I prefer for the present to offer no more than the clinical suggestion.

CANCER OF THE PENIS.*

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Malignant disease of the penis occurs almost invariably as epithelial carcinoma and begins with about equal frequency on the inner surface of the prepuce or upon the glans.

According to Jacobson, its mode of commencement is varied. It appears most frequently as: 1. A wart or warty excrescence. 2. Sometimes, however, it makes its appearance as a small nodule or knot of induration under the surface of the mucous membrane. 3. Again, epithelioma is observed occurring under the form of a superficial excoriation or raw patch, resembling the erosions found in balano-posthitis. 4. It may develop as an ulcer resulting from the transformation of a chancroid or the breaking down of an old cicatrix, or sometimes from a crack or tear on the margin of a tight foreskin.

In cases of extreme rarity epithelioma of the penis develops from the extension of the malignant process outwards from the urethra or upwards from the scrotum.

Etiology.—Under the head of predisposing causes, age plays an important role, and epithelioma of the penis is very rarely found except between the fiftieth and seventieth years.

The next most important predisposing cause is phimosis. Demarquay found that out of 59 cases of epithelioma of the penis 42 had long and phimotic foreskins, and many authors have called attention to the fact that the circumcised Jews are almost entirely free from this disease.

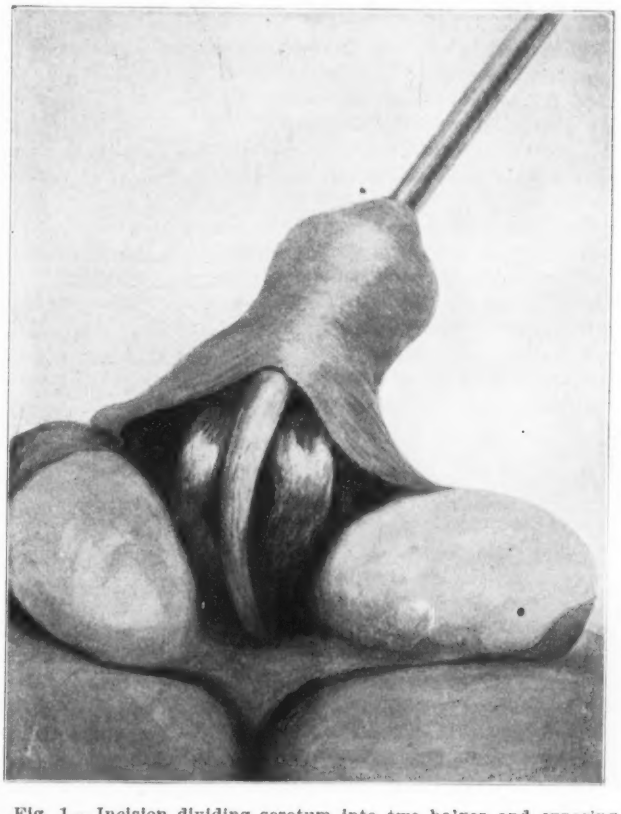

Fig. 1.—Incision dividing scrotum into two halves and exposing corpus spongiosum, urethra, corpora cavernosa and triangular ligament.

Even though the glans be covered with a long foreskin, if the individual attends to the daily cleansing of the balano-preputial sac, there is no opportunity for irritating secretions to be retained; but we notice that cancer of the penis almost always occurs in men in the lower walks of life, of neglectful and uncleanly personal habits.

Any condition which gives rise to a balano-posthitis, such as the retention of decomposed smegma and urine under a phimotic foreskin, particularly if aggravated by a gouty diathesis in the patient, excites a persistent and long-continued irritation. In an elderly person in course of time the simple inflammatory process undergoes a transition into carcinoma of a polymorphous type, composed of large pavement cells and small epithelial cells.

Course.—No matter in what form the disease had its origin, its course is one of extension at the edges, accom-

* Read before the New York State Medical Association.

panied by ulceration and breaking down in the older parts, and in most cases this is attended by the formation of large vegetations or fungosities, resembling a cauliflower in shape. A thin fluid, of a most disgusting odor, which dries into scabs, is continually secreted.

As the cancerous process extends only by continuity, its advance through the corpora cavernosa is not rapid, but the lymphatics readily take up the infectious material, carry it to the glands in the groin, and these are usually involved quite early in the disease. The inguinal lymphatic glands are often the seat of a mixed infection if pyogenic bacteria have been conveyed to them through the lymphatics and cause them to become inflamed and suppurate.

Diagnosis.—Every warty or papillomatous growth or persistent erosion occurring on the glans penis or inner surface of the prepuce, in an elderly person, should always be regarded with grave suspicion.

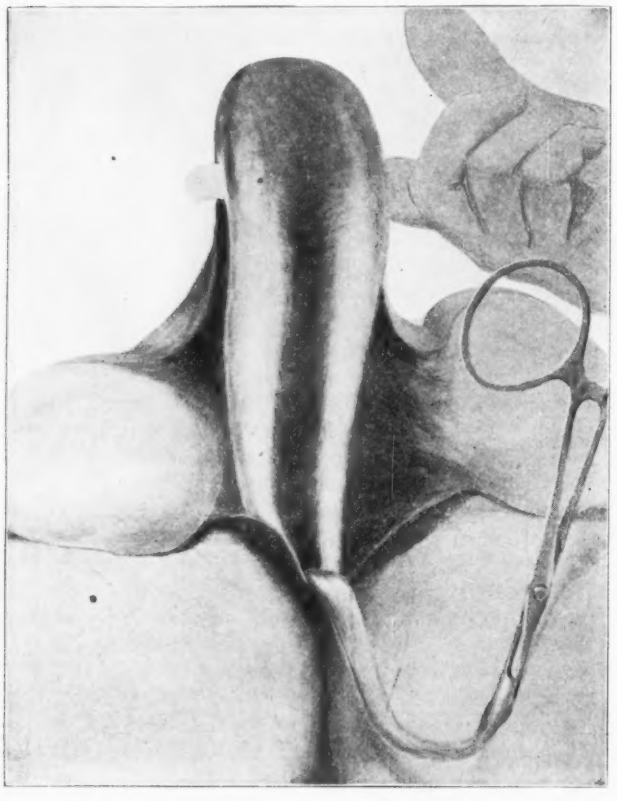

Fig. 2.—Corpus spongiosum containing urethra dissected away from corpora cavernosa, cut through and hanging down at lower angle of the wound.

It is often difficult to differentiate simple papillomata or a chronic balano-posthitis from carcinoma, but the sore, together with a base which is hard, infiltrated and immovable, and an edge which is hard and infiltrated, would point strongly in the direction of epithelial carcinoma. The diagnosis could be definitely determined by cutting a small piece from the growth and subjecting it to microscopic examination. A gumma of the penis occurring in tertiary syphilis might be easily mistaken for epithelioma, but a few weeks' treatment with mercury and iodids would cause the gumma to disappear.

Prognosis.—The prognosis of epithelioma of the penis is of course fatal without operation, and death occurs in from one to two years. If the disease is seen early and the growth removed by amputation of the penis and extirpation of the groin glands the prognosis is good, but many cases come into the hands of the surgeon too late for a complete removal of all the foci of infection. Winiwarter reports twelve amputations, of which five remained permanently well, one died of the operation and six had recurrences, three of which were in the stump and three in the glands.

Treatment.—As already indicated, complete removal of all deposits at the earliest possible moment offers the patient the only opportunity of saving his life, and the application of caustics only excites greater activity in the growth and is a waste of valuable time.

Two forms of operation are in use, and a selection depends upon the extent to which the inguinal glands and corpora cavernosa are involved.

Operation.—In amputation of the free portion of the penis, a 20 French sound is introduced through the meatus into the bladder to indicate the position of the urethra. A harelip pin is thrust through both corpora cavernosa at the root of the penis to hold in place a rubber band, which is made to encircle the penis and act

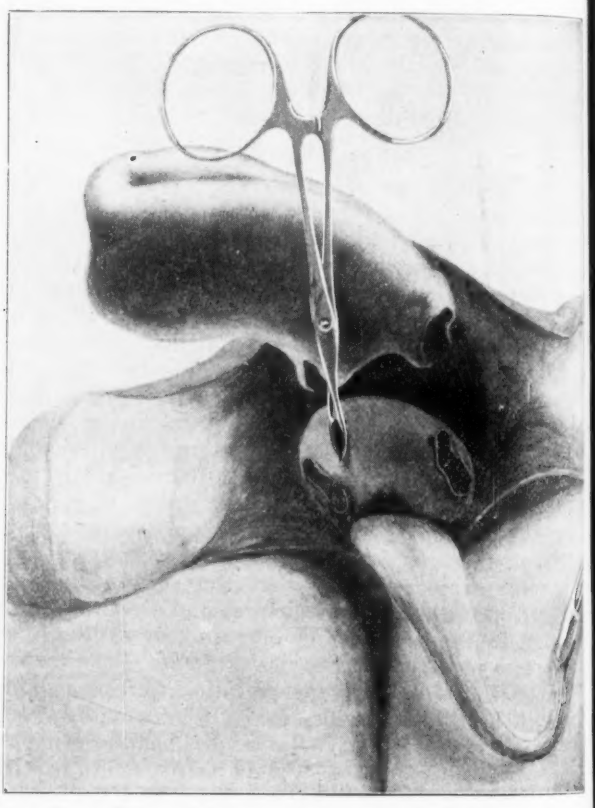

Fig. 3.—Charred stumps of corpora cavernosa after separation from pubes by burning through them with Paquelin cautery.

as a tourniquet. The skin of the penis is then cut through with a circular sweep of the knife and turned back an inch. The corpora cavernosa are then divided down to the corpus spongiosum, which, with the urethra, is left to project like a spout for an inch, before being cut through. The tourniquet is then unloosened and at least four arteries will require ligation. The skin flaps are then sutured together and the urethra stitched to the margins of the skin flaps. A soft rubber catheter is tied in the bladder to prevent the urine from infecting the fresh wound.

Amputation of the entire penis is a much more serious operation than the former, but is demanded in the case of extensive infiltration of the corpora cavernosa with cancerous deposit.

The patient is placed in the lithotomy position and a sound is introduced through the urethra into the bladder. An incision is made along the raphe of the scro-

tum, splitting it into two halves. The dissection is carried down so that the corpus spongiosum is seen perforating the triangular ligament with the corpora cavernosa lying on either side and attached to the rami of the pubes (Fig. 1).

The corpus spongiosum containing the urethra is then dissected away from the corpora cavernosa for three inches, cut through and allowed to hang down out of the way, at the lower angle of the wound (Fig. 2).

The next step is to separate the corpora cavernosa from their attachments to the rami of the pubes. It is generally recommended that this should be done with a periosteal elevator. The close attachment to the bones renders this a matter of considerable difficulty, and after separation there is a free hemorrhage which is difficult to control. The author prefers to burn through the crura penis with a Paquelin cautery close to their attachments to the bone and in this way the corpora cavernosa

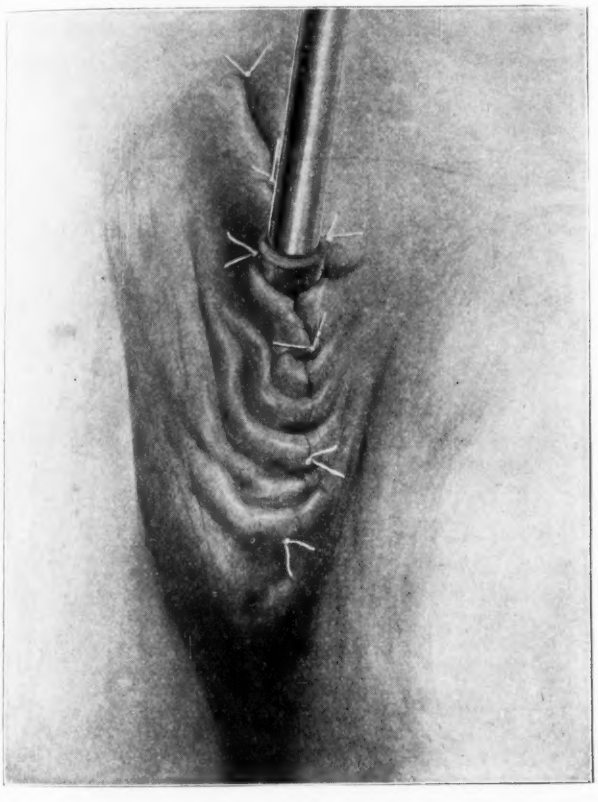

Fig. 4.—Operation as completed. Urethra sutured into wound, with sound introduced through it. Lateral flaps brought in apposition and retained by interrupted sutures.

are readily freed from the pubes and without hemorrhage (Fig. 3). The Paquelin can also be used to stop bleeding, which generally occurs from the dorsal vessels of the penis under the symphysis pubis, at the upper angle of the wound. The final steps of the operation consist in bringing the urethra up into the wound and stitching it to the margins of the skin flaps, and then the skin on either side is brought into apposition and stitched. A catheter may be carried through the urethra and left in the bladder to drain it (Fig. 4).

In this operation the testicles are exposed and may be left in the wound, or castration may be performed to quell the sexual desire on the part of the patient after his recovery. The inguinal lymphatic glands should be removed at the time any operation is performed for the relief of malignant disease of the penis, for if the glands have become infected, which occurs early in the disease, a recurrence of the cancer will inevitably take place later on.

The writer has operated in the manner described in three cases. One patient, a man of advanced years, died from sepsis a week following the operation. In this case the operation was a protracted one, as the crura penis were separated from the pubic bones by means of the periosteal elevator, and the difficulties of freeing them from their attachments and afterwards of stopping the hemorrhage were very considerable. In the second and third cases the separation of the crura penis was accomplished with great facility by burning through their attachments with the Paquelin cautery.

The second patient lived a year after the operation and died of a recurrence of the growth in the healed scar of the wound.

The third case was operated on three months ago and the wound healed by primary union, but although the glands in the groin, which were enlarged and beginning to break down, were entirely removed at the time of the operation, a recurrence has taken place at that point and the progress of the disease is very rapid.

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MEDIAN PERINEAL PROSTATECTOMY: TOTAL REMOVAL OF THE PROSTATE GLAND. SIX CASES.*

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There are so many different methods of treating prostatics that one is forced to the conclusion that the subject is in an evolutionary stage. I venture the assertion that every surgeon of experience has often been disappointed with many of the procedures he had employed. It is true that every case is more or less a special one, having individual features and combined phenomena of its own, but when we consider the radical treatment, that is, total prostatectomy, it should not take us very long to establish one method as the safest and best. The era of giving permanent relief to over 25 per cent. of the male population in the last third of life began in 1887, with first, Belfield of Chicago, and then McGill of Leeds, England. They did a partial and then as they improved their technique, complete suprapubic extirpation of the prostate gland. At the present time, through the combined efforts and experience of surgeons the world over, not forgetting to give a larger amount of credit to American surgeons, suprapubic total prostatectomy with a perineal incision for drainage is about as perfect as can be expected. I am surprised to notice that Mr. P. J. Freyer of London, England, in speaking of suprapubic prostatectomy, gives no credit to other surgeons for removing the entire gland by that method. In closing a lecture delivered by him at the Medical Graduates' College, June 26, 1901, entitled "A Clinical Lecture on Total Extirpation of the Prostate for Radical Cure of Enlargement of that Organ," he makes the following statement: "I think I shall not be accused of exaggeration when I state that all previous so-called methods of radical cure of enlarged prostate are unsatisfactory, and that catheterism, though the least objectionable mode of treatment in the vast majority of cases, is liable sooner or later to terminate in cystitis, or other danger-

*Read before the Southern Surgical and Gynecological Society meeting held at Richmond, Va., November 12-14, 1901.

ous complications; I admit that the thoroughly successful results obtained in these four cases of total extirpation of the enlarged prostate encourage us in the hope that we have at last arrived at a rational method of dealing with this painful and frequently fatal malady."[1]

This is an illustration of a surgeon probably too busy to look up the literature on his own special subject. In accordance with our American text-books on genito-urinary surgery, let alone the most recent articles in medical journals, the claims of Mr. Freyer that, by his procedure, "we have at last arrived at a rational method," etc., come too late.

We have all been practicing it, and still we are not satisfied. The patient is often disappointed with the results. The dangers from shock, hemorrhage and sepsis by this method are not trifling; the mortality is too high; the discomfort from the suprapubic incision with sometimes a permanent fistula as a sequel, is objectionable; in a proportion of cases the bladder fails to regain its power of expulsion, especially when all the urine had to be drawn off by catheter before the operation was performed. The prostate is difficult of extirpation from above and when large masses are removed they overstretch the neck of the bladder and incontinence of urine may result. It must not be forgotten that the prostate is situated external to the bladder and it seems too bad that the latter should be attacked and injured in front and behind in order to deal with offending portions of the former. I shall endeavor to show that the entire prostate can be removed more quickly and safely through the perineum than through the bladder. Let me first briefly state what has been done by other surgeons in this line.

In 1895, six years ago, Nicoll of Glasgow removed the prostate through a T-shaped incision in the perineum. He did an intra-capsular enucleation with the fingers of one hand, while through a suprapubic cystotomy he made counter-pressure from above within the bladder with the fingers of the other hand. He packed the perineal wound with gauze, inserted a retention catheter through the urethra into the bladder, and closed the suprapubic wound.

In 1896, Alexander improved Nicoll's operation by performing a suprapubic and also a perineal cystotomy. He cut through the membranous portion of the urethra. After enucleation he drained both ways.

Guiteras performed a perineo-prevesical operation. He opened the space of Retzius suprapubically, through which he made counter-pressure on the bladder without opening it here.[2] Another method of Guiteras is the vesico-rectal method. It is objectionable to open the rectum and the same can be said of the prevesical space or bladder.

Syms[3] endeavors to aid perineal prostatectomy by using a rubber retractor with which he claims "to pull the bladder and prostate down into the perineum so that the lobes can be reached and enucleated with the index finger. This retractor consists of a soft rubber bulb, cemented to the end of a strong rubber tube of a caliber of 38 French scale. It is introduced into the bladder through an opening in the membranous portion of the urethra; the bulb is then distended till it has a diameter of 2½ or 3 inches." In this operation the membranous urethra is opened, which can be avoided by the method which I practice. The injury to this portion of the urethra is objectionable and the overstretching of the neck of the bladder by means of the bulb of the retractor is, I am convinced, a serious procedure. Let me here quote his own words: "In two of the cases there was incontinence of urine for some weeks." In one case the patient regained control of his bladder, but in the other the incontinence is permanent, as is honestly given in a foot-note. This result to the neck of the bladder is exactly what might be anticipated from such a retractor. Powerful traction made on the retractor dilates the neck of the bladder unduly, and incontinence is the result. In connection with the literature of perineal lithotomy many cases of permanent incontinence of urine are recorded, following the forcible extraction of a large stone.

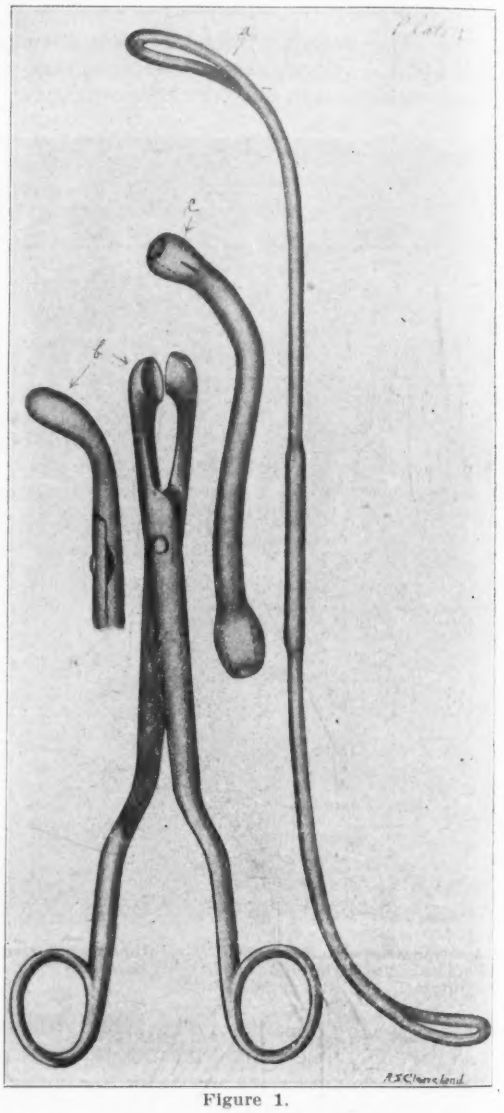

Figure 1.

Von Dittel, previous to Nicoll's operation, had several times successfully removed the prostate through an extra-vesical incision, beginning at the apex of the coccyx and going to the right of the anus in a semicircular manner. The dissection is carried along the side of the rectum to the prostate, etc. Several other surgeons have operated by this method. A crescentic incision in front of the anus has also been used, even for a partial prostatectomy, but in reaching the prostate undue destruction of the perineum was done. The most recent surgical text-books, Bryant's "Operative Surgery," for instance, state that "if the prostatic urethra be so much lengthened because of the prostatic hyper-

1. Brit. Med. Journal, July 20, 1901.
2. Phil. Med. Journal, April 20, 1901.
3. Journal A. M. A., Nov. 2, 1901.

trophy that the finger is not available for exploration purposes, this method (median perineal prostatectomy) of operation should not be practiced."

In the literature are found the writings of many surgeons in connection with partial as well as complete prostatectomy through the perineum. Chief among these are T. E. Bryant, Gouley, Eugene Fuller, Reginald Harrison, Mercier, G. Frank Lydston, R. D. Webb and H. H. Young.

By the method I am about to describe, all forms of prostatic enlargement are successfully treated.

OPERATION.

Put the patient asleep with chloroform and place him in the extra-lithotomy position; insert the prostatic depressor—Plate 1, (A)—into the bladder, through the urethra, and hand it over to a trusty assistant. Insert a sponge into the rectum to prevent escape of liquid feces. Then introduce the middle finger of the left gloved hand into the rectum and press it against the

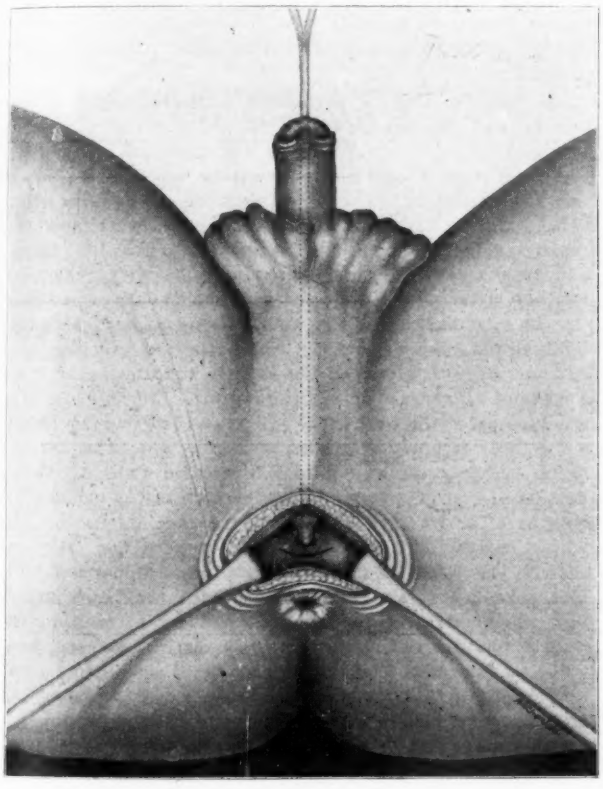

Figure 2.

urethra at the junction of membranous and prostatic portions; pass a long narrow-bladed knife into the perineum through the raphe, posteriorly, two inches in front of the anus, until it reaches near the tip of the finger in the rectum and with one stroke cut through all the structures to the prostate without injury to the urethra, prostate, rectum or anal sphincter. Refrain from doing this in your first cases, but incise more carefully. Now enlarge the skin incision, if necessary, for the introduction of two fingers. Place suitable retractors—Plate 2, (A)—one on each side, into the wound, and by blunt dissection expose the prostate and with the depressor in the bladder force it into the perineal wound—Plate 2. Open the capsule with knife or scissors in a transverse direction sufficiently to admit one or two fingers. *Place the retractors within the capsule.* This is important, because traction made on them drags the gland still further into the wound and holds it firmly while enucleation and extirpation are being performed. It is experienced that by traction from below and depression from above, the prostate is fixed, within easy reach for its entire removal. Enucleate with the finger and bite away the portions thus liberated with the prostatic forceps—Plate 1, (B)—until by piecemeal the prostatectomy is completed. Small, strong, blunt hooks may be used to advantage to drag the gland down. No effort is made to save the posterior portion of the prostatic urethra; indeed, injury to it can not be avoided when the entire gland is removed. While morcellement is in progress, it is always advantageous to advance the retractors farther within the capsule and sometimes to introduce the middle finger into the bladder. The forceps can be rapidly thrust between the two fingers to the object to be removed, without any danger to surrounding structures, for when the instrument is closed, its end is perfectly smooth and round. The lateral lobes can be reached to any extent without damaging

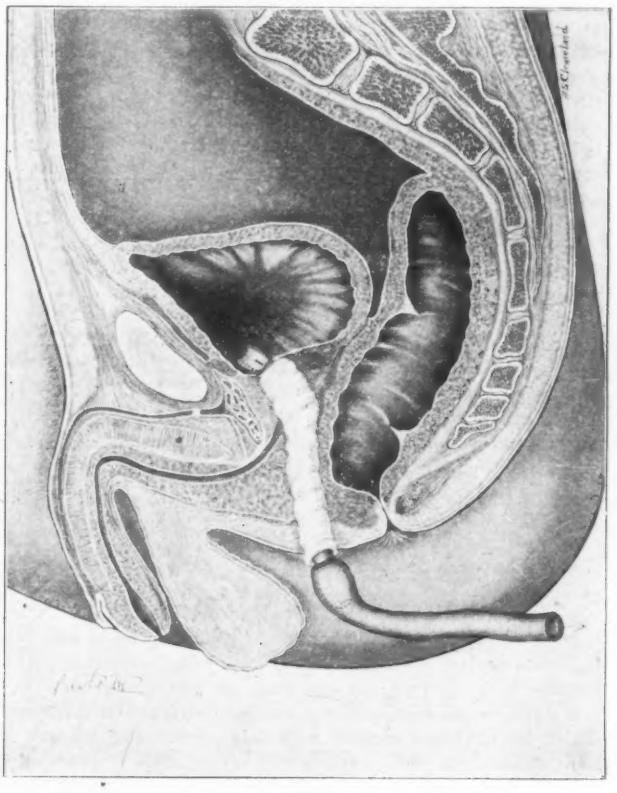

Figure 3.

the wall of the bladder, and prostatic projections of the middle lobe are detected and removed without difficulty. Flush out the bladder very thoroughly with a weak antiseptic solution. A large stream of water should be used, for the ordinary irrigating toy only does harm. Mop out with gauze any water that is in the bladder and wound and introduce a drainage tube —Plate 1 (C)—surrounded with iodoform gauze—Plate 3—through the wound into the bladder. A couple of stitches close the part of the skin wound not occupied by the tube and at the same time prevent the gauze from coming out too soon. Remove the sponge from the rectum, place a comfortable firm dressing over the perineum and retain it by a T-shaped bandage. Now attach a long rubber tube to the external end of the drainage tube, and the toilet of the operation is finished.

If the patient's urine has been scanty or should he

show depression or shock, then it is better to introduce two or three pints of normal salt solution, at a temperature not less than 115° F., beneath the skin while he is still in the operating room than to wait until he is taken to bed.

CASE 1.—Mr. W., aged 65, German farmer, was referred to me by Dr. Pratt, of Goodland, Ind., complaining of frequent, difficult and painful urination. Temperature was 101 F., pulse 96 and respirations 20. When he entered the hospital there was great desire to urinate, but he could not accomplish it. The urine, to the amount of 24 ounces, was drawn off through a soft rubber catheter with surgical cleanliness. In three hours he had a chill, vomited, temperature 102, pulse 120 and respirations 24. The bladder was washed out with boric acid solution, and 5 grains of urotropin given every four hours internally. The next day he was as well as he was when he entered the hospital. The urine drawn off contained a large quantity of pus, was acid, and had specific gravity of 1010. It was ascertained that his bladder symptoms began ten years previously. The painful urination only commenced three months before; complete retention occurred three times during the last six months. In brief, he had the symptoms and signs of prostatic obstruction, complicated with prostato-cystitis. Seven days were occupied with preparatory treatment. He was given light diet, calomel, strychnia, urotropin, salines and enemata. The bladder was washed t. i. d. with a solution of chinosol, 15 grs. to the ounce of sterilized water. Each time, before the bladder was irrigated, he passed what urine he could, and was then catheterized. During those seven days the amount of residual urine averaged 18 ounces and he voided about 50 ounces in all during each twenty-four hours. It contained pyogenic germs, pus, bladder cells, no sugar and a trace of albumin. The temperature did not fall below 99 F. There was slight leucocytosis, no pain in lumbar region, and no tenderness elicited by prodding over the kidneys nor by palpation. He could not bear firm pressure over the bladder. Through the rectum I could ascertain that the lateral lobes were tender and very large; the one on the left could be felt bimanually. The preparation relieved him very much, and the quantity of pus was very markedly reduced. No cystoscopic examination was attempted, on account of the prostatitis and cystitis. His personal and family history was excellent. On Nov. 20, 1900, I performed a median perineal prostatectomy. The whole prostate was removed with ease; the portions projecting within the bladder were reached without any difficulty. Some sections of the organ were so adherent to the capsule that the finger could not liberate them, but these were snipped away with the cutting forceps. The aid rendered by the depressor was valuable when dealing with the central lobe, which projected into the bladder fully an inch; at one time the instrument was turned end downwards, behind the prostate, and traction made on it, which brought the central lobe into view. The bladder was now washed out and a cystoscopic examination made. There was no injury done to the bladder and the membranous urethra was not lacerated in the least, but the posterior portion of the prostatic urethra was taken away. The cystoscope was not of much use, except in seeing that the bladder was not traumatized. With my forefinger I could feel the large cavity from which the gland had been removed. He suffered no manifestations of shock whatever; had no vomiting; the highest temperature during convalescence was 99 F., and the highest pulse rate 98. The tube was removed on the seventh day. The perineal wound closed on the fifteenth day and he left the hospital on the 11th of December, 1900, just three weeks from the day of the operation.

Condition on Leaving: He was walking about, urinating six times during the day, and once at night. Had no pain or discomfort, no residual urine, was gaining in flesh, and felt happy. A few pus cells and bacteria were still in the urine, and a trace of albumin. There were no casts. He reported two months later that he was working on his farm, had no trouble in urinating, no pus and no albumin in the urine. Report six months later from Dr. Pratt: Mr. W. died suddenly of angina pectoris. He was working at the time; had not complained of bladder symptoms.

CASE 2.—Mr. B. B. F., aged 69, also referred by Mr. Pratt, of Goodland, Ind., entered hospital Dec. 6, 1900, with a letter stating his exact condition. He complained of inability to pass water freely; the onset was tardy; the stream was slow, painful, and urine dribbled. The quantity of urine, passed the first twenty-four hours, was only 12 ounces; it was acid, dark-brown in color; specific gravity 1021; urea 2.5 per cent.; albuminous, contained blood, pus and cylindroids. The frequent urination began to be troublesome five or six years ago. His personal and family histories were very good. In order to increase the quantity of urine and to improve its quality, all the water possible was administered by mouth, rectum and subcutaneously. He improved every day; at the end of a week he voided 68 ounces of urine, but it still contained pus and albumin. During preparations the residual urine varied between 7 and 16 ounces. The bladder was irrigated twice a day; urotropin and strychnia were given three times a day. With the attention given so comfortable did he become that he almost backed out of an operation. The prostatic urethra was two inches longer than normal. The left lobe could be felt per rectum to be enlarged. With the cystoscope I could see the central projection and the tumor formed by the left lobe quite distinctly. The redness and granular appearance of the inflamed prostate were very distinct.

On Dec. 14, 1900, I performed a median perineal prostatectomy and removed the entire left and median and about two-thirds of the right lobe, although it was normal. There was no shock. The next day his temperature was 100 F., pulse 70, and respiration 22. The second day the slight fever had subsided. On the fifth day the tube and gauze were removed and replaced. On the sixth day temperature was 102, pulse 78, and respiration 24. The gauze and tube were removed and left out, after which the constitutional disturbances subsided. On the seventeenth day the wound closed and much to his delight he passed his urine per vias naturales. By this time it had increased to 8 ounces, but it still contained some pus and a trace of albumin. He left the hospital Jan. 9, 1901, twenty-six days after the operation. He was then passing his urine every three or four hours, during the day and twice during the night. A cystoscopic examination revealed a slightly reddened portion of mucous membrane at the neck of the bladder. Five months after leaving the hospital he came alone to Chicago with a carload of cattle and called to see me. He stated that he was a new man. This gave me an opportunity to see him pass a full stream of urine, with that ease and comfort which might be envied by a younger man. On passing a catheter, no residual urine was there; this specimen of urine was normal. This gentleman never had used the catheter, but his physician had passed it for him occasionally the last couple of weeks before coming to the hospital.

CASE 3.—Mr. C. W. G. entered the hospital March 15, 1901, accompanied by Dr. Wagner of Tacoma, Wash. He was complaining of inability to urinate naturally. The act of urination was slow, difficult, sometimes painful, and often impossible. The time occupied was often from twenty minutes to half an hour, and repeated efforts not infrequently were futile to pass any at all; then the catheter had to be used. He has had to get up six or eight times during the night; three hours is about the longest time he could go without trying to urinate. The quantity passed each time varied, but often only about an ounce was voided. He had had two years and a half of catheter life. It is four years since his bladder trouble began. He remembered going to Victoria, B. C., to play golf, and held his urine too long, and after the game was over he had trouble to urinate. At that time the urine came slowly and only with considerable effort; for a few years before this he had to get out of bed at night once or twice, but thought nothing of it and after this he had more or less difficulty. He was steadily getting worse. In the fall of 1899 the prostate was enlarged with sounds of a suitable curve. In October, 1899, inflammation of the bladder and prostate nearly ended his life. During this illness he lost 50 pounds and a slough of prostatic

tissue came away. He then improved. Although he has had several attacks of irritation of the bladder, prostrating him for several days at a time, still he has had none so severe as in October, a year ago. His personal and family histories are excellent.

Physical Examination: He was passing only 30 ounces of urine, which contained pus, etc. Residual urine was 12 ounces. In four days this quantity was increased to 70 ounces, but residual was just the same. Urea, 1.2; specific gravity, 1014; contained pus; acid reaction. I made two cystoscopic examinations in this case, one two months before he came for operation, and again after he entered the hospital. The instrument passed into the bladder without difficulty each time; there was a deep groove posteriorly where the middle lobe had been, and from which it had sloughed away, as already mentioned. The prostatic urethra was nearly normal in length, but two large tumors could be seen closing the canal as the cystoscope was being removed. There was no cystitis and I feared the pus came from one of the kidneys, but fortunately it did not. The central groove simulated that left after a Bottini operation, but was much deeper and wider. Here was an excellent proof of urinary obstruction, caused by enlarged lateral lobes. By a rectal examination the hypertrophy did not feel to be excessive, although the size of two hens' eggs. On March 19, 1901, the operation was performed and the two large lateral lobes and what was left of the central were removed. Patient suffered practically no shock. He vomited a few times after the chloroform. The tube and gauze were removed on the fourth day. Bladder control was regained on the tenth day. At the end of two weeks he went out driving, the next day his left testicle was swollen and tender. The orchitis (not epididymitis) did not subside for ten days. On the twentieth day urine ceased to come through the perineum. The wound was reopened twice thereafter, and then it closed permanently. It was six weeks before he left the hospital, at which time a few pus cells could be detected in the urine, but he completely emptied his bladder, without pain or inconvenience. Reports since are to the effect that he feels as well as he ever did.

CASE 4.—Mr. M. A. Perry, Iowa, age 51 years, referred by Dr. Mercer of Chicago, entered the Chicago Hospital on April 3, 1901, complaining of: 1, frequent and painful urination; 2, inability to work; 3, disturbed every hour or two of the night, and 4, a sudden stoppage of the stream occasionally. He suffered most excruciatingly. It was distressing to witness him having what he called "spasms." The pain in the bladder was constant and severe, but that in the urethra and at the glans penis was much worse. His trouble began eight years ago with symptoms of stone in the bladder. The last year attacks of pain and fever would confine him to the house for days. The last two years he passed small uric acid calculi off and on, which he carried in his pocket. The urine has been scanty for three years. He was now passing 64 ounces and there is 11 ounces of residual; specific gravity, 1020; urea, 1.5 per cent. Blood, pus, albumin and indican are present. Thompson's stone-searcher was passed, and the stones felt and the clicking sound heard as they were tapped by it. Examination through the rectum was negative; no enlargement of the prostate could be felt; but the large amount of residual urine indicated obstruction. At the end of four days he was ready for the operation. He was then chloroformed, and cystoscopic examination made. The middle lobe protruded into the bladder. It was pear-shaped, and inflamed. It was with some difficulty that the stones could be seen by direct view. On April 7 I did the median perineal operation and removed the whole prostate and six stones. Although the lateral lobes were not much enlarged, I thought it wise to remove them, to prevent further trouble. He suffered so much with spasms at the neck of the bladder, after the operation, that morphia had to be given freely. On the third day I removed the tube with the hope of relieving him, but he suffered with the spasms four days longer. He passed his water naturally on the fourteenth day and left the hospital on April 30, 1901, in excellent spirits and health. There was no residual urine then; pus was still present. October 10 last he presented himself to show me how well he was. He was completely cured; urine normal, etc.

CASE 5.—Mr. P. C. H., aged 69, entered Chicago Hospital on April 19 1901, complaining of difficult and painful urination. The quantity of urine varied from 30 to 60 ounces, of low specific gravity, 1002; urea less than one per cent.; contained blood, pus, and hyaline casts. Passed from 2 to 4 ounces at a time. On account of some fever (99 F.) and general weakness, he was in the hospital for twelve days before operation; during this time the pyrexia continued. Difficulty in urinating began sixteen years ago (1885), which he attributed to horseback-riding. In 1893 cystitis came on, and he has not been well since. The last year he expertly catherterized himself. He had several attacks of double epididymitis, and is now suffering from a chronic hydrocele that has been several times injected.

Operation was on April 30, 1901. Through the perineum I made a very sweeping operation of the whole prostate gland in a very few minutes. The gland protruded in all directions. It could be outlined bimanually as a huge mass in the pelvis, the left lobe extending upwards into the bladder, so as to be palpable. The prostatic urethra was two and one-half inches too long. The central lobe was nodular, three large nodules extending from it into the bladder. A more difficult case could not have been selected to test the scope of my procedure via the perineum. I also operated on the hydroceie. The tube was removed on the fourth day. On the twelfth he sat up in a chair. Perineum closed on the twentieth day. He left the hospital on the thirty-third day after the operation. He has written that he has not been so well for years. When he left for home the urine was free from pus.

CASE 6.—Mr. A. M., age 72, carpenter, referred by Dr. Alexander, presented himself on March 12, 1901, complaining of incontinence of urine. He was wearing a rubber urinal to keep himself dry. In 1888 frequent urination and night disturbances began. For six years he managed to bear with his "weakness," as he called it. In 1894, after drinking too much spirits, and after going home about 12 o'clock at night, he failed to micturate. Towards morning he became so distressed that a physician was called. He catheterized him. On two other occasions within a year the physician drew off his urine. In the intervals, outside of frequent acts, he felt all right. During the last two years he has been using a catheter somewhat carelessly, but without infecting himself. It was a silver catheter, No. 6, of English make, with a good curve. It was never boiled. He simply washed it with soap and water after using it, blew his breath through it and put it back into an old leather case. He declared that before using it the desire to urinate was so urgent he simply smeared vaseline or lard over it and then relieved himself. Three weeks ago the urine began to dribble. It made him uncomfortable, so he bought the urinal. Since then he has only used the catheter about once a day. In the interim he allowed the urine to escape into the urinal.

After he had urinated two ounces I passed the catheter and withdrew 36 ounces of almost normal urine. I was surprised at this because of the careless manner in which he used the catheter. Its specific gravity was 1018; straw color, urea 1.5; no pus, blood or bacteria, nor casts, albumin, nor sugar. He said that years ago he had passed some blood once or twice, but since he had learned to use the silver catheter his urine has been clear and normal in color.

On March 15, 1901, I removed through the perineum the two lateral lobes, hypertrophied to about the same extent, being about two inches in their longest diameter. On the third day I removed the drainage tube from the bladder. He urinated through the perineum for a week when about one-half the urine began to come through the penis. At no time did I deem it necessary to wash out his bladder. On the twentieth day after the operation the perineal wound was closed permanently, but it took him over an hour to empty his bladder. In the course of two months the contractile power of the bladder markedly improved and it did not then take him over twenty minutes to empty his bladder, but still the abdominal muscles had to be used and he had to strain in order to void all the urine. November 5, 1901, this gentleman is well and happy,

passes his urine normally, but it is diminishing in quantity, according to his judgment. He stated that he knows the quantity is less, but did not think it necessary to measure it.

ADVANTAGES OF THE OPERATION.

1. It is the most direct route to the prostate.
2. Injury to the bladder is avoided.
3. The operation can be quite easily performed. Even in those cases where the gland has been repeatedly inflamed it is not as hard to remove it from below as from above.
4. It is an advantage to remove the gland piece by piece for it enables the surgeon to work through a small opening without bruising the surrounding parts by the finger or a blunt instrument.
5. Hemorrhage is avoided so long as one is careful to work within the capsule. The hemorrhage in suprapubic prostatectomy or in the combined method is often very alarming. On one occasion the writer had to leave pressure forceps on bleeding vessels and pack the bladder tightly with gauze for twenty-four hours. The patient narrowly escaped death from both hemorrhage and sepsis. Sepsis and intoxication from pus and fetid urine coming in contact with the prevesical tissues and wounded and raw surfaces within the bladder are sources of great danger in the suprapubic operation. The bladder may be opened in two stages, it is true, and the prevesical space thereby greatly protected; but the traumatism of the bladder over the prostate, even though done with a cautery knife, furnishes an opportunity for sepsis.
6. Perineal drainage is more complete.
7. The danger from septicemia is not at all prominent after perineal prostatectomy, and so far has given no anxiety whatever, whereas more or less absorption of septic material is the rule in the suprapubic operation.
8. There is less danger of uremia. The operation consuming less time; the short anesthesia affects the kidneys less and there being a minimum opportunity for sepsis there is less work for the kidneys to perform. Uremia is always to be dreaded regardless of the operation.
9. The perineal operation is accompanied by far less shock than the author has noticed following suprapubic prostatectomy.

While not unmindful of the fact that but six cases are here reported, still the results obtained in these six cases have been so satisfactory that I am encouraged to continue this method of operating and also feel justified in recommending it to the profession.

Additional work on the prostate for hypertrophy of the middle lobe alone may be justly mentioned. In four cases, two complicated with vesical calculus which I crushed, the central pathologic lobe was removed through the median perineal section. In four other cases, viz., tuberculosis of prostate, which had extended to it from the epididymis on each side, I removed the gland entirely through the median incision. In these cases the testicles were preserved. Through an incision in each inguinal region the epididymis and testicles were pulled up, the former carefully separated from the latter, the internal inguinal ring enlarged, the vas deferens followed to the base of the bladder, and by blunt dissection a through-and-through communication with the perineal opening was obtained, which enabled me to extirpate the whole diseased track on both sides.

Double inguino-perineal as well as vesico-perineal drainage is necessary in those cases.

FRACTURE OF THE METACARPAL BONES, AND OBLIQUE FRACTURE, SIMPLE OR COMPOUND, OF THE FOREARM.*

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The functional results in the treatment of fractures are, in the main, so good that we can not hope for much better, without material improvement in the methods of treatment. The time has come when we must give more thought and consideration to anatomic results and appearances, regardless of the excellent results in useful limbs obtained by present methods. The *x*-ray has demonstrated this necessity, which overrides the argument of mere utility. Though the skiagraph may exaggerate and distort, yet, in honest and capable hands, it gives a fair illustration of the position of the fragments and with the aid of the fluoroscope, no serious mistake need be made. More accurate adjustment and coaptation of fragments is a manifest necessity, not only for the patient himself, but in a medicolegal sense to the surgeon. This is specially true in the treatment of oblique fractures of the long bones, and of special moment and consideration in the management of oblique fractures of both bones of the leg and forearm. Knowing that inflammation and complications incident to fractures of the forearm are more common than elsewhere, we also can not forget that rotation, affecting as it does, the future usefulness of the arm, is always involved. These considerations lend additional interest to these injuries. Despite union with much overlapping and displacement, or bony union of one and non-union of the other, good functional results are common, with no disfigurement in the outline of the limb; yet we can not be content with this result and condition. If the surgeon does not protect his reputation by every safeguard, the *x*-ray will destroy it in the courts if he treats many fractures—now the most dangerous field to the surgeon.

If the x-ray reveals what the educated senses and manipulation of the surgeon will not, and this is sometimes the case especially in fleshy subjects and fractures in the middle and upper third of the tibia and fibula, what is the remedy? If effusion of blood and lymph are, as Lane asserts, the chief obstacles to reduction and coaptation of fragments, then it is true that nothing short of operation by wiring, nailing or fixation by some such contrivance will enable the surgeon to thoroughly adjust and fix the fragments. There can be no question that blood and lymph do play important parts in the malposition of fragments. To this extent the application of splints, bandages or plaster will not correct the displacement; and extension, if delayed, will not be of much use. So whatever method is adopted, whether operation or the ordinary application of splints and extension, it should be used promptly. Delay, with the action of blood, lymph and muscular action, tends only to maintain the fragments more rigidly in the position left by the force of the offending agent. The action of the muscles, it seems to me, is under-estimated by Lane, while probably over-estimated by others and the influence of blood and lymph under-estimated. The fact remains that the ordinary treatment of oblique fractures of both bones of leg and forearm by splints, box, plaster, silicates and extension, are often very unsatisfactory, as is the case in similar treatment of fractures involving the elbow joint.

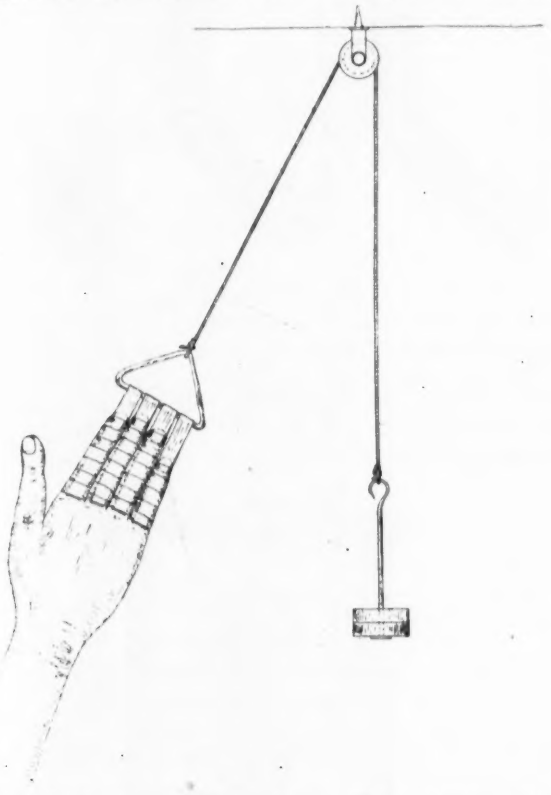
I know of no other procedure short of wiring, nailing

* Read at the Western Surgical and Gynecological Association, Chicago, Dec. 18, 1901.

or the application of some fixation device directly to the fragments that will insure more perfect results. If either fibular fragment in any part is forced against the tibia, with or without a fracture of the latter, will any manipulation or force short of direct application to the fragments restore them to their proper place in apposition? I believe not; yet the outward contour and functional results may be satisfactory to the surgeon.

How would the ordinary Pott's fracture, as treated, look under the fluoroscope or in a skiagram? Doubtless it would not appear very pleasing in its axial line and its relation to the astragalus.

As to oblique fractures of the forearm, extension is not ordinarily used. If compound, the fragments should be wired or nailed. If not compound, continuous extension should be applied, or the bones should be treated by direct fixation. The latter has the advantage of not necessarily confining the patient to the room. Effective continuous extension does confine him, and it should



be maintained ten or fifteen days. We hesitate, quite naturally, to resort to the operative treatment, even with all the best aseptic agencies at hand, as long as fairly satisfactory results are obtained by other means. We can not, too, be unmindful of the fact that without the ordinary text-books and teachings to support us, we are in law and practice exposed to the dangers always incident to new and unfrequented paths. Yet without courage and the force of individual conviction progress is not possible.

I have nothing new in principle to present. It is but the application of Buck's extension in the treatment of fractures of the femur, to fractures of the forearm and hand. The method is equally appropriate in certain inflammatory conditions of the wrist and elbow joints. My attention was first directed to the matter in a desperate case that came under my care on July 4 last. The National Guard in camp at Boulder was firing a salute with 6-pound brass cannon when the premature discharge of a gun completely lacerated the soft tissues of the left arm of Corporal P. from shoulder to hand, and also badly lacerated the right hand from the palmar surface and front of wrist. The little finger was torn off at the second joint, and its metacarpal bone was fractured in two or three places, completely detaching the proximal half. The second and third metacarpal bones were fractured near the metacarpo-phalangeal articulations; the third had a second fracture near the proximal end. and the fourth metacarpal also near the wrist was fractured; the ulnar artery was severed at the wrist, and the pisiform and cuneiform bones so badly damaged that they were removed. The thumb and first metacarpal were the only parts connected with the hand that were not badly damaged. I was on hand promptly and by the quick application of a rubber tourniquet around axilla and shoulder stopped the severe hemorrhage from the left arm. His left side was extensively and deeply burned, and face and eye were burned badly and powder stained. By the use of saline infusions with strychnin and external heat, reaction was sufficient in two hours to justify operation. Under heart tonics and the continuous subcutaneous infusion of normal salt solution while operating, I promptly amputated left arm at shoulder. With the compound comminuted fractures of right hand and badly burned and lacerated tissues, which were infiltrated with foreign matter, I could not expect the hand to escape infection. The bones were adjusted as well as possible, but to retain them in position, and therefore in respectable form to the hand, was, at the time, impossible. It was not safe to prolong the operation. So the badly damaged carpal bones and half of the fifth metacarpal were removed, vessels ligated, and the hand dressed and drained with iodoform gauze between loose splints. Hot water was applied continuously for ten days. Suppuration ensued and finally the middle flexor tendon, which was badly lacerated, and some of the fascia sloughed. At the end of two weeks I made incisions over the fractures of middle and index metacarpals near the phalangeal joints, as the greatest disfigurement existed at these points, and fastened the fragments with silver wire. The bones were soft, and. in order to hold all the parts in as good shape as possible (splints and bandages being practically useless), I applied the following extension apparatus to the fingers (index, middle and ring): Moleskin plasters, the width of the fingers. were applied back and front, all passing in a loop through a triangular ring (with a horizontal bar) about two and one-half inches in diameter, and each finger bandaged separately. (These are fortified by a wide piece of plaster covering all.) A small cord is tied to the ring and carried over a small pulley screwed into the ceiling lath. Three 1-pound weights were attached by a small iron hook to the distal end of the cord. Counter-extension may be applied by bandaging the arm to the body, commencing with a loop of bandage around the arm just above elbow and passing at first backwards around the body. With this arrangement the patient could lie down, sit or stand, and the extension will not vary a particle. If desired, the arm can be fixed by bandage to the bed frame. Splints, with antiseptic gauze drainage to the palm, were lightly applied during the treatment, which was maintained for two weeks and was easily borne. For fracture of forearm wide strips of plaster should be applied to back and front of hand and through the ring as before. In this case my aim was not only to save the hand, but to preserve its form, with as much motion as possible to the fingers. I am gratified to state that the thumb. first

metacarpal and wrist motions are perfect, and there is some movement to index and ring fingers, with promise of more. The flexor sloughed, and the others are necessarily crippled by adhesive inflammation. Had the other hand and arm been intact there would have been great temptation to amputate this hand; but in this day of bold and radical surgery, conservatism, too, achieves its greatest triumphs, which splendidly justifies the greater labor, time and skill devoted to it. Although the hand suppurated rather freely and there was extensive sloughing of the skin on left side from shoulder to waist line, which, with the hand, healed slowly, there was no general infection at any time. The patient at this time is in very good condition, and has one good arm and a fair hand, and will become again self-supporting.

I am aware that ambulatory extension to the forearm, with the lower part of the humerus as a fulcrum, is sometimes made or attempted, but I doubt if efficient, continuous and comfortable extension can in this way be satisfactorily carried out.

THE QUESTION OF SPINAL BRACES IN LATERAL CURVATURE.*

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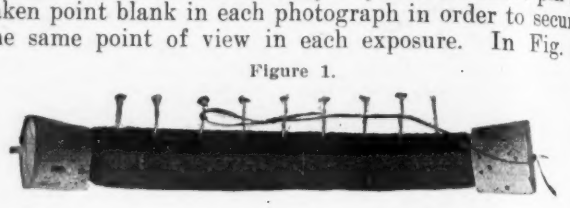
It has been proposed that apparatus having a strong antero-posterior action for the maintenance of lordosis be used, instead of braces which make the customary pressure on the ribs, in lateral curvature of the spine. Experiments in this direction have, however, resulted in nothing notable, and the suggestion has been fruitless so far as I am aware. It may be that the inconvenience of wearing such a brace is too great in a disease which carries with it no menace to the patient's life and but little to her health and comeliness. It might be argued, but not too seriously, that lateral curvature of the spine is an attractive feature, falling in the same category as a slight cast or squint, which has been thought to add piquancy to the beauty of a pretty face. It can not be denied that the typical sigmoid curvature reproduces the technical curved line of beauty or that the accompanying rotation carries with it an expression of serpentine or sinuous grace.

It is true that in rare instances the rotation is so extreme that the kyphos rivals that of an ill-treated case of Pott's disease. As a rule, however, the deformity is not conspicuous and we are generally satisfied with the results of treatment which is palliative rather than radical. In Pott's disease the forcible production of lordosis transfers compression from the vertebral bodies to the processes, which as a rule are healthy. The same force in lateral curvature produces the same effect, taking superincumbent weight from the bodies which depart from, and putting it on the processes which are held near, the median plane. This provides a mechanical application directed against rotation, which is the most intractable element of the deformity.

Such may never be the established treatment, but an appreciation of the mechanics involved makes clear the fact that rotation is produced by the lateral mobility of the anterior section of the column combined with the absence of such mobility in the posterior section.

An interesting contribution to the study of this subject is the suggestion that rotation in lateral curvature may be determined by the flexion or extension of the spine. As an aid in this inquiry I arranged for photography an imitation of the spine, made of India rubber, Fig. 1, in order to see whether antero-posterior variation would influence rotation in any way. The middle pin is taken point blank in each photograph in order to secure the same point of view in each exposure. In Fig. 2

Figure 1.



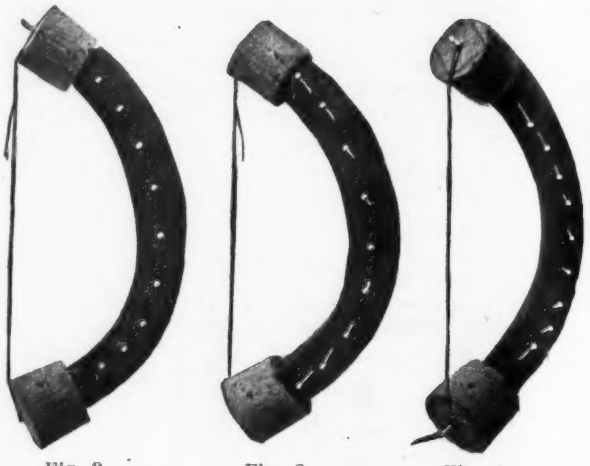


Fig. 2. Fig. 3. Fig. 4.

there is a plain lateral curve without flexion or extension. The heads only of the pins are seen, showing the absence of flexion, extension and rotation. In Fig. 3 a lateral curve is combined with flexion. The latter is shown by the inclination of the pins and the absence of rotation is demonstrated by the fact that the head only of the

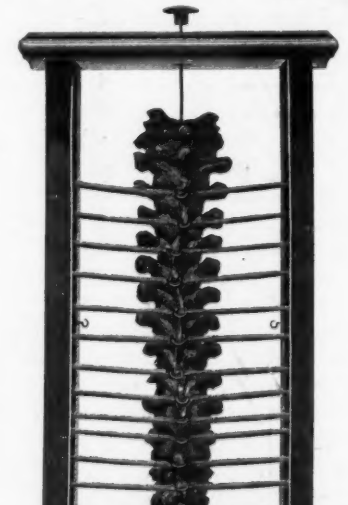


Figure 5.

middle pin is visible while the heads of all the pins are found in the middle of the curved column. In Fig. 4 a lateral curve is combined with extension as is shown by the inclination of the pins. Some rotation is apparent, but this would have disappeared if the object had been

* Read before the American Orthopedic Association, June, 1901.

placed more carefully before the camera so that only the head of the middle pin had been exposed.

From this it would appear that rotation of the spine is unaffected by its flexion or extension, a result which might have been expected *a priori,* because the curve in any case is but a simple curve and incompetent, as such, to govern rotation. In Figs. 3 and 4 the curve may at the first glance seem to be made up of two curves, a lateral and an antero-posterior one, but further consideration leads to the view that it is a simple curve, produced by the resultant of two forces, one acting in an antero-posterior and the other in a lateral plane, and as such it has no more power over rotation than any other simple curve.

It may be said that any rod or flexible column can not, of itself, rotate when curved. The spine, however, is a flexible column, a part of which, made up of the vertebral bodies, has wide lateral displacement (or has extra flexibility) in the cavity of the trunk; while another part, composed of the processes, is prevented from lateral

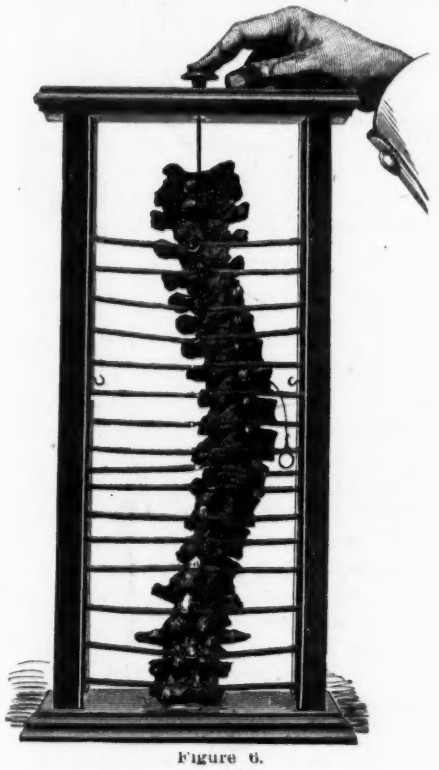


Figure 6.

displacement (or has less flexibility) from being a constituent part of the wall of the cavity. It, therefore, rotates when curved. This view was presented by Mr. Charles H. Rogers-Harrison in 1842.[1] The mechanics of spinal rotation thus described in words is shown in the common preparation of the vertebral column, Figs. 5 and 6, in which the processes are held near the median plane by a succession of spiral wire springs, while the bodies, swinging away from the median plane, exhibit rotation.[2]

The application of posterior pressure is demanded by the mechanics of the deformity which, on the other hand, furnish no warrant for the use of a brace making lateral pressure at the ribs. Such a brace may promote comfort and conceal asymmetry, but if it is applied with force it will add to the deformity. As the ribs spring from the posterior section of the column, pressure on them will push the spinous processes still further towards the concavity and thus increase the rotation, as was pointed out by Mr. Andrew Dods[3] in 1824. The difficulty may be readily appreciated by imagining the effect of lateral pressure made directly on the vertebral bodies without the intervention of the ribs. The effect of such an application, impossible as yet, would be to combat, by one motion, both the lateral curvature and the rotation, at once correcting the deformity in simple cases in which structural changes were absent.

1. Deformities of the Spine and Chest, London, pp. 93 and 94.
2. Transactions New York Academy of Medicine, 1876, pp. 315-330.
3. The Rotated or Contorted Spine, London, pp. 226 and 227.

THE REPORT OF A TYPHOID EPIDEMIC AT THE IOWA STATE AGRICULTURAL COLLEGE.

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This epidemic occurred at the State College of Agriculture and the Mechanic Arts, at Ames, Iowa, in the fall of 1900. The total number of cases was 65. Of this number 23 went to their homes at the onset, or early in the disease; 42 remained to be cared for at the college—males 33, and females 9.

General Environments.—The college is located one and one-half miles from the town proper. It is situated on a 1000-acre plot of high rolling land, provided with most excellent natural drainage, abundant exposure to sun and wind, and altogether one of the most naturally healthful spots in the state. The buildings are large and well constructed, and fitted with first-class water supply, plumbing and sewage-disposal—in short, they are in good sanitary condition.

The enrolment of students at the time of the outbreak was about 900. Many of them roomed at the various college dormitories. Margaret hall, a building devoted to the lady students, contains also the large college dining-hall. Most of those students who roomed in college buildings and a few additional students and faculty assistants took their meals at this dining-hall. Of those remaining, some lived in the dormitories and dined outside the college; others both roomed and boarded entirely off the campus in private residences near the college or in the town proper, but all used the one water supply, closets, etc., while on the grounds.

This definite knowledge of the whereabouts and customs of the entire student body rendered possible a systematic study of etiologic factors and warrants a somewhat detailed narration of the events which led to the discovery of the source of infection.

When it became apparent that the college was in the face of an epidemic there was instituted a renewed study of the existing sanitation and a determined search for the origin of the disease. The problem was approached from the following vantage grounds: 1, sewers and sewage disposal; 2, water supply; 3, food supply; 4, all other possible sources.

Sewers and Sewage Disposal.—The closets of the various buildings, the laboratories, the creamery, the laundry and kitchen in Margaret hall, as well as many of the faculty residences, are connected by individual outlets with the main sewer. The sewers are of the most approved sewer tile, comparatively new, and were constructed under the direct supervision of most thoroughly competent sanitary engineers. The plumbing is of the best; modern ventilated traps are used throughout, and are supplied with arrangement for abundant flushing. It has been the custom during the college term to give the sewers an extra flushing at least once a week. The

system was inspected without the discovery of any defect whatever. No leak could have existed without detection owing to quantitative measurements of the sewage and other sewage experiments which were then in progress.

The sewage-disposal system is that known as the septic tank and intermittent filtration process. This is the most modern and satisfactory system in use to-day. It is so successful that after the sewage has passed through the septic tank and through the bacterial filter beds the effluent can scarcely be told by its appearance from the clearest sparkling well water. The principle upon which the plan depends entails the process of septic precipitation and bacterial consumption, combined with simple filtration. This plant was in the most perfect condition and was heartily approved by Dr. J. F. Kennedy, of the State Board of Health, during his inspection of the entire college premises.

The College Water Supply.—The water is pumped from a well 2215 feet deep into a large, tightly closed steel tank, 168 feet above the surface, and is piped to the various college buildings and residences on the campus. The tank, when filled, contains 160,000 gallons. The daily consumption of water is 90,000 gallons. So that if the tank were completely filled the regular demand would exhaust the supply in less than two days. However, as a rule, the tank is kept about half full. Hence, practically each day's supply is freshly drawn from over 2,000 feet below the surface. When the tank is half filled there is a pressure of 60 pounds to the square inch in the mains. Had there been even such a misfortune as a leaky main passing through a bed of typhoid bacilli, the water would have found constant exit through the leaks with such force as to have positively precluded the possibility of bacillary entrance.

The water had been examined each year and always found in good condition. But, not content with this and the above negative evidence, it was again subjected to thorough chemic and bacteriologic tests, and found to be in an exceptionally high state of purification. These analyses were made by Prof. J. B. Weems, of the department of chemistry, and Prof. L. H. Pammel, college bacteriologist, and were confirmed by Prof. Macy and Dr. Grimes, respectively chemist and bacteriologist of the Iowa State Board of Health. Failing to locate the difficulty in the college water supply attention was called to the

BOARDING DEPARTMENT.

Here nothing leading to a clew was discovered, until in the investigation of food and its sources there was reached the important item of milk.

The Milk Supply.—At the beginning of the term the college had contracted with one Skelton and one Pritchard (farmers near the college) for the necessary supply. But on September 2 Mr. Skelton's supply having practically failed, he arranged with one Mr. Briley (another farmer) to make good the deficit. Mr. Briley did so and in large amounts from September 3 until October 17, the greatest amount having been delivered during the week from September 15 to 24. At the mention of the Briley milk the recollection at once occurred to the author of the existence, nearly all summer, of a severe and prolonged case of typhoid in the family of Mr. Briley. The case occurred in the practice of Dr. C. S. Hutchinson, of Ames, who assured me of the correctness of diagnosis. Acting upon the suggestiveness of this coincidence the Briley milk was rejected in toto, and all other milk subjected to pasteurization prior to its use. Investigation was further continued, but it is very interesting to note in this connection that the last case was bedridden November 3—three days less than three weeks (usual limit of period of incubation) from the date on which the Briley milk was condemned.

Additional Water Examinations.—Specimens of water were obtained from Skelton's, Pritchard's and Briley's wells—the latter having two wells. Both chemists and bacteriologists pronounced all the specimens free from suspicion except the shallower one of the two Briley wells. This water is said to have contained over 180,000 germs to the cubic centimeter—among them a bacillus somewhat resembling Eberth's bacillus—if not that identical organism, it was at any rate a member of the typhosus group. Regarding the chemic conditions of this water, Professor Weems reported as follows:

> The Briley wells, two in number, are situated about four feet apart, one having a depth of 180 and the other 45 feet. The 180-foot well showed chemically to have water of excellent quality. The shallow well is, on the other hand, evidently contaminated from some source. The excessive amounts of nitrogen as nitrates and nitrites, and also chlorids would indicate that some vault or outhouse was the cause of contamination. The results also indicate that a large amount of the organic matter in the original source of contamination had been oxidized by the process of nitrification. The water was in worse condition than the effluent of the college sewage beds. . . . From a chemical consideration of the matter the conclusion of the investigation shows that the Briley shallow well is evidently the cause of the trouble, as it probably is in connection, by some underground means, with a vault. It would naturally result that should typhoid bacilli be introduced into the vault or outhouse the underground connection would transmit them to the well readily through the casing of the well; and the use of this water for washing the milk cans and watering the milk would transfer the germs to the individual using the milk.

Mr. Briley admitted that he did not scald the milk cans; hence, if bacilli were present in the wash water nothing hindered their development in the cans.

Further Facts Regarding the Milk.—The milk collected in these unscalded cans was delivered at the college once each day, about 8 or 9 a. m. It was kept all day and served for supper, thus allowing an abundance of time for the development of bacilli. Owing to its tendency to sour easily it was kept separate from the other milk. The cook drew from this supply for cooking purposes, but the greater portion remained to be served first for supper. The dining-room contained 61 tables, with 8 persons per table, making the total of 488 people in the dining-room served at the same time. Three pounds of milk were served to each table, except Nos. 58 and 59, the patrons of which received a double portion, six pounds each. These were known as the training tables, being patronized by sixteen football men in training. These students were encouraged to use their double portion of milk, and it is a painfully significant fact that thirteen of those sixteen powerful fellows contracted typhoid.

Some of the Briley milk reached various parts of the room, but a greater portion was distributed in the west half, and a greater number of cases occurred among those of that end. The younger students, many of whom were recently from rural homes, occupied this section, and being accustomed to the use of milk at home as an acceptable food, doubtless drank more than the older students. There were no cases among those who did not drink raw milk, and in every instance of sickness, upon interrogation regarding the milk, the patient replied that he had drank milk freely. Whether the Briley well

water contained the organisms and the milk became in this manner infected, or whether by flies passing from the dejecta to the milk cans in a tank near by will never be positively known because of the unfortunate destruction of the bacteriologic laboratory and its contents by fire. Isolation experiments with the milk and with the Briley water were in process when the disastrous fire occurred in the main building and destroyed all cultures and further means of determining the exact method of infection of the milk. But in the light of the above facts there can be no reasonable doubt as to the infectiousness of the milk from whichever of the two sources it may have originated.

General Management of the Epidemic.—The college is provided with a very satisfactory little hospital for the care of its sick. But, unfortunately, at the time of this epidemic the building was not habitable owing to extensive repairs then in progress. We had a small tent which was in use as a temporary hospital, and into this were taken the first few victims. But new cases developed rapidly. We were compelled to leave many of them in their various rooms to the care of their already over busy room-mates until suitable quarters could be obtained. Upon October 15 we procured a large recitation-room in the Agricultural building. All furniture was removed, floors scrubbed and patients installed with great dispatch. Nurses were procured, and with this unorganized, unfitted arrangement our epidemic continued to swell. Between October 8 and 17 there occurred 46 cases, 33 of whom remained to be cared for in our improvised hospital. The other 13 went to their homes. From this time on the number of new cases grew less rapidly till by November 3 the last case was bedridden and the total number had swelled to 65—of whom 42 were in our hospital.

The actual disease was severe and the demand for medical attention on the part of the genuine cases and the "psychologic typhoids" was so great that it became necessary to procure assistance. Accordingly, the services of Dr. C. G. Tilden (now of Stanhope, Iowa), were procured.

Diagnosis.—The 42 cases treated at the college occurred in the following sequence:

October 8, three cases.
" 9, one case.
" 10, two cases.
" 11, four cases.
" 12, seven cases.
" 13, two cases.
" 14, three cases.
" 15, seven cases.
" 16, three cases.
" 17, one case.
" 19, two cases.
" 20, one case.
" 24, two cases.
" 27, two cases.
November 3, two cases.

There was some hesitancy in the first three or four cases, but the diagnosis was practically forced upon us within a few days by the continued daily development of new cases. The usual history of insidious invasion was characteristic of all cases in this series. Headache with slight elevation of temperature, noticeable body soreness, and general malaise were common to almost every case. Epistaxis was present in about half the cases, constipation was the rule with two or three exceptions. Confinement to bed, enlargement of the spleen, and the steplike temperature were noticeable in a vast majority within a week of their first report of illness. The splenic involvement was more generally present here, I believe, than is usually the case. The appearance of rose spots was wonderfully constant, and there were cases in which this phenomenon was most generously present, not only on the abdomen and chest, but over the entire body surface. The diagnosis was almost purely clinical. There was little apparent need for microscopic confirmation of our fears. Indeed, I am now quite in sympathy with an elderly physician of my acquaintance who once unburdened himself to me in the following terms: "When you have a patient between the age of 10 and 50, especially if it be in the fall of the year, who has complained of general depression for a week, and then becomes bedridden with a temperature higher each day, the sooner you decide the case is one of typhoid the sooner you are right." Gilman Thompson voices the same sentiment when he says: "It is a good rule to suspect typhoid fever as present, with any temperature not explained by demonstrable cause, which lasts for three or four days without complete morning intermission especially if the facies be dull and dusky, and the tip of the tongue be sharp and red, with prominent papillæ."

It is not my wish to ignore the serum diagnosis, nor to belittle the claim of blood counts, but the average physician is not supplied with a pure culture of typhoid bacilli, or even in touch with a laboratory which is thus prepared to make the Widal test. The Widal reaction was obtained very positively in the six cases in which it was made in this epidemic. About the time we were able to get our cases into the improvised hospital the question of diagnosis was raised again by certain conventional people, and so we called Dr. L. W. Littig, of the chair of medicine at the State University. He confirmed the diagnosis, assisted very materially in the organization of the hospital and gave us many valuable suggestions.

Classification of Cases.—The clinical picture of typhoid fever is so varied that one speaks of typical or atypical cases with a considerable lack of definiteness. To be properly considered atypical a case must present a very unusual symptom complex in typhoid. From a purely clinical standpoint the division into the abortive, the ambulatory and the grave forms is convenient. In this epidemic we had typhoid with intestinal lesions in every one of the 42 cases. There were 5, and possibly a 6th, in whom the intestinal involvement was slight, but general infection was markedly present. It is somewhat remarkable that in a list of 42 there should have been none of the rather common pneumo-typhoid. We had one case which was properly a spleno-typhoid. It is true that there was one case which suffered from an intercurrent attack of pneumonia, and another who had acute mania, but these must be considered complicated cases rather than varieties. From the clinical basis there were of the abortive typhoid 4, of the mild variety 7, of grave form 18, and of very severe or intensely grave nature 13. Those considered very grave were cases in which there existed serious complications accompanied by profound infection and prolonged duration of the disease. Those considered grave suffered from exaggeration of all the phenomena common to typical typhoid, and many of them had complications of varying severity. That group of cases chronicled as mild were typical cases not accompanied by severe complications, but which continued for from four to six weeks uneventfully through the successive stages of the disease.

Complications and Special Symptoms. Intestinal Hemorrhage.—Intestinal hemorrhage occurred in 7 of the 42 cases, or 16.66 per cent. Most of the hemorrhages

occurred in the latter part of the second week or later, but there was one case in which from one to eight ounces escaped from the bowel from one to six times in each twenty-four hours, beginning in the first week and ceasing two weeks later. He made a good recovery after sixty days of illness. Another case was peculiar in that every time he had an enema, be it ever so small a quantity and ever so soothing in quality, the procedure was followed by hemorrhage. There were bloody evacuations at other times, but this peculiarity was interesting. In those cases where the actual loss of blood was considerable the prompt use of normal salt solution seemed to strengthen the patient rapidly, but one of our deaths was due to very large hemorrhages frequently repeated.

Cardiac Complications.—One young man who had been an habitual user of large amounts of tobacco had a weak heart to begin with. We feared very much for this patient, but under generous allowances of strychnia and digitalin with most persistent bathing, he weathered the storm nicely. There was only one pronounced case of endocarditis, one of pericarditis (following an intercurrent pneumonia) and six cases of myocarditis or cardiac myasthenia. All the cardiac cases recovered.

Respiratory Complication.—There was but one real complication of this sort, though about half the cases showed some slight bronchial irritation early in the disease. One patient contracted a left-sided lobar pneumonia in the second week of his illness. He passed through the stages of pneumonia in a manner seemingly independent of the typhoid. After resolution he continued the usual indications of uneventful typhoid, but in a few days developed pericarditis, with slight effusion, and finally, after numerous pseudo-collapses and the lapse of eighty-three days, recovered without sequela.

Phlebitis.—Occurred in five patients—both limbs being affected in one of the cases. These cases were prolonged as result of the thrombosis and suffered quite as much as did those who had neuritis, but all made good recovery. It developed invariably late, not earlier than the fifth week.

Neuritis.—This was experienced by four cases. In each instance the nerves of the feet and toes were affected. The slightest touch was painful, and no voluntary movement could be made by the patient without the penalty of most intense pain. Like phlebitis, neuritis occurred very late in the disease, and recovery was finally complete in every case.

Hyperpyrexia.—There were three patients whose temperature reached a point higher than 106 F., one of whom sustained for three hours a registration of 107.2 and recovered. This temperature was at the outset of endocarditis and was followed by profound collapse which nearly cost the patient his life.

Intestinal Perforation.—This occurred in one case and remarkably early, being on the eighth day of the fever. It was sudden, without ascertainable cause, and death followed within twelve hours, due ultimately to collapse. Surgical interference was impossible owing to the profound shock.

Acute Mania.—A lady student, aged 30 years, developed acute mania with suicidal tendencies at the very onset of the fever and continued through an otherwise mild attack of the disease. Her mind gradually returned to a more nearly normal state, but had not entirely cleared when she passed from our observation two weeks after the temperature reached normal. She was an exceptionally fine student and especially interested in psychology. No doubt her excessive brain work had much to do with her mentality during the attack.

TREATMENT.

There was no specific treatment unless, indeed, the routine administration of baths and other stimulants may be considered specific treatment.

Baths.—To most patients cold baths were given whenever the temperature reached 102.6. Those whose temperatures did not reach that during twenty-four hours were given tepid sponging at least once each day. Cold sponging was substituted for cold emersion bath in a few instances where the sponging was found sufficient to reduce the temperature satisfactorily. The actual all-over baths were given with water but slightly warmer than ice. Ice was kept constantly in the water and packed about the head. These baths were continued from five minutes to as long as a half-hour in extremely high temperature of persistent character. Large rubber sheets were used by being placed under the patient as is any sheet, then by pinning the head and foot to the bedstead and rolling up the sides a veritable bath tub was made which would hold, besides the patient, four or five pails of water. If he were able the patient was encouraged to rub himself while from two to four people were kept actively at work on the skin. In those whose temperature had shown tendency to persist in spite of previous baths and in cases not accompanied by severe intestinal hemorrhage, several pints of iced water were thrown into the colon by means of a 15-inch rectal tube, during the bath or immediately following it. In many instances the patient would complain bitterly of the bath, the teeth chatter, the skin become cyanotic, etc. But generally in a short time the buccal temperature would be somewhat lowered, pulse become stronger and less frequent, delirium lessened, subsultus cease, carphologia disappear, and by the time the patient was out and wrapped in dry woolen blankets, many times, would be asleep perhaps for the first time in twenty-four hours. I have known patients to waken after two or three hours of this "post-hydral" sleep mentally clear and physically improved beyond the most sanguine expectations. Weak heart instead of being a contra-indication positively indicates such treatment in high temperature. Menstruation is no contra-indication, nor is intestinal hemorrhage, nor again profuse epistaxis or apparent nervous collapse, provided in the latter instance the temperature is as high as 103. It is said that phlebitis and neuritis are more frequent complications under this treatment than by other methods. But between a living patient with one or both of these complications and a deceased one with neither, one very much prefers the former. I can not understand how any man who has watched a series of cases under this treatment, properly supported by such medicinal measures as are indicated from time to time, can possibly question its superiority over any other method.

Probably the practice next nearest the routine in this epidemic was the administration of strychnia. Whenever the first sound of the heart began to be weak, whether it was in the first week or later, the strychnia was exhibited, sometimes by mouth, but when the myocarditis became marked it was given hypodermically—in some cases so often and heroically as 1/20 grain every three hours. In many cases brandy or whisky was added and sometimes substituted for the strychnia. There were, however, cases in which from a cardiac standpoint neither strychnia, alcohol or the combination of the two, seemed to accomplish good circulation. Here digitalis was administered—generally in the form of hypodermic injections of digitalin. When given in or-

dinary doses no results followed, but at the suggestion of Dr. J. T. Priestley, of Des Moines, who saw the cases with us at one time, we employed digitalin in hypodermic doses of 1/18 to 1/8 grain and obtained finally the characteristic effect of digitalis in spite of high temperature. However, digitalis seemed totally without the sustaining power which is obtained by strychnia in conjunction with cold baths.

In the matter of medicines perhaps the next most used drug was calomel in combination with sodium bicarbonate. In the early stages—first and second weeks—this combination was prescribed for all patients whose bowels were not moved at least once a day. A tablet containing calomel 1/5 grain and sodium bicarbonate ½ grain was given every half, or in some instances every hour, until the bowels were evacuated or until ten were taken. Frequently this was followed by from one to three ounces of hunyadi water, or a small dose of magnesium sulphate, but not in every instance did we deem the saline essential. We did not hesitate to exhibit the calomel later in the disease, and saw only most happy results. The only contra-indication was intestinal hemorrhage. I am aware that so eminent an authority as J. C. Wilson recommends the use of small enemata daily to accomplish the required movement, but I learned to dread the use of the enema after witnessing the occurrence of copious bright red hemorrhages in three cases immediately following its use, and a repetition of the hemorrhage in one markedly tympanitic patient at each succeeding attempt with the enema. I believe the secret in the management of constipation throughout the disease is in persistently procuring a daily movement. Compound licorice powder, cascara cordial and a pill of podophyllin, belladonna and physostigma were employed with success, but nothing seemed more satisfactory than calomel as used above.

In diarrhea beta-naphthol bismuth acted kindly, as did rather large infrequent doses of guaiacol carbonate. When tympanites was marked the old-time turpentine emulsion made without egg proved quite satisfactory, though there were instances in which six grains of guaiacol carbonate every four hours was really more efficacious.

Of the 42 cases treated at the college 2 died, a percentage of mortality of 4.7. Of the 23 who were treated at their homes, 3 died, a mortality of 13 per cent. This is a great argument in favor of hospital treatment of typhoid.

THE IDENTIFICATION OF CRIMINALS THROUGH THE FUNDUS OF THE EYE.

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Commensurate with the importance of the certain identification of criminals have been the efforts at elaborating a reliable system for this purpose. Most prominent in this line stands out the method of M. Bertillon; yet even in it there occur so many data subject to change by reason of growth, voluntary effacement or disfiguration, that further additions are by no means undesirable.

I wish here to call attention to the fact that anybody could at any time, with a certainty, be identified by the anatomical conformation of the fundus oculi; in fact, the disposition of the arteria centralis retinæ and its branches alone would be sufficient for the purpose.

I admit that a casual observation would fail to do so, but identification by a previously made—and that with the greatest exactitude—drawing of the fundus would leave no room for doubt. While there are many details sufficiently characteristic in the papilla, yet there is enough inconstancy to make them unavailable. This is not true of the vascular branching on the papilla and in the peripapillary region. Text-books describe fully the retinal vessels, usually according to Leber's description, which is a good one, indeed, but, after all, it is only schematic. For reference, this is quite sufficient, but, in this manner, there has been produced in the minds of oculists the idea that the anatomical arrangement is fairly constant—a belief thoroughly erroneous.

I could extend this article *ad infinitum*, as I am in possession of several hundred fundus records which plainly prove my statements. However, any fairly proficient ophthalmoscopist can so easily prove my assertions, that I prefer confirmation by others. If at any time detailed data should be desired, I should be most willing to submit them. My proposition reads thus:

Absolute identification can be obtained by a drawing (exact as a photographic reproduction or nearly so) of the papilla and a surrounding retinal circle distant from the scleral ring by two papillary diameters. So great is the multiplicity of the anatomical relations of the vascular twigs that I have never been able to find even two fellow organs exactly alike.

The points to be considered are:

1. The method of division (dichotomous or otherwise).
2. The exact point of division.
3. The exact angle of the vessels with the primary meridians.
4. The exact distance of one divisional point from the other.
5. The relative size of the divided twigs.
6. The angle of division.
7. The course of the twigs (straight, curved, etc.).
8. The exact distance, everywhere and at every point, between venous and arterial branches (parallelism, convergence or divergence, twining, etc.).

While other marks may be added, they are, though perhaps valuable, not needed. No knowldge of pathology is required. Identifying inspection could not be made by a collective glance, but only by the most scrupulous attention to every structural detail. It would, therefore, require some time. The only condition able to impair the value of this test would be impossibility of fundus exploration due to clouding of the media.

Inordinate enthusiasm and positivism very often bear the earmarks of immature consideration, but, in this instance, I beg my confrères to ignore this circumstance by lending their help to verify the truth of assertions fraught with so much practical importance.

Radiotherapy of Lupus.—Leredde reported at a recent meeting of the Paris Société de Thérapeutique that he had treated during the last year 43 patients with lupus of one to thirty-five years' duration. They had a previous record of 1796 thermo- or galvano-cauterizations, 908 seances of scarifications, 7 deep cauterizations under chloroform, 61 applications of high frequency electricity and 295 injections of tuberculin. Only one patient had been cured by these measures and the lupus had recurred later in him. None of the rest had had even a small segment of the lupus cured. Under radiotherapy 8 are now completely cured; 7 seem to be cured, but the interval is not long enough for certainty.

The Organization of the Medical Profession.

(Continued from page 461.)

VII.

UNIFORMITY OF ORGANIZATION OF STATE SOCIETIES NECESSARY.

The organization of most of the state and territorial societies was adopted without any idea of conforming to a definite plan. The constitution or organic law of each was made in accordance with the views of the little band who gathered to form the new society, and no central or national body attempted to guide them so that they might follow any particular system. In fact, thirteen of these state societies were in existence before the American Medical Association was started, and five more were formed before it could have outlined any system for them to follow had it attempted to do so. We find, therefore, what might have been expected, that no two are organized on the same plan in every particular. Some are incorporated and recognized by the law of the state, and are endowed with certain legally defined functions, such as the power to hold property; others have still further powers granted them, as the right to appoint officers of certain boards, of granting license to practice, etc., and some are incorporated with practically no powers. The great majority, however, are not incorporated, and consequently have no existence in the eyes of the law. But whether they are incorporated or not is immaterial as regards their relations to the American Medical Association, yet there are many reasons why state societies should be legally recognized; in fact, this will be necessary if some of the work contemplated should be taken up.

Aside from this difference in the organic laws, there are other differences that are extremely important, and these must be eliminated if the plan of bringing the state societies together, as proposed, be carried out. We refer to the relation they bear to the subordinate societies in the state. In this regard the various state organizations may be divided into three classes: 1, those in which the county or district societies are federated in the state society, membership in the subordinate body carrying membership in the state; 2, those in which there is an only indirect relationship between the two, and 3, those that do not recognize in any manner any subordinate society. In the first class are Alabama, Connecticut, Indiana, Massachusetts, New Jersey, New York State Medical Association, and Pennsylvania, although no two of these are organized at all alike, aside from the fact that membership in the lower carries with it membership in the higher body. As regards the second class, the relationship between the state and the county or district societies varies greatly in different states; but it would take too much space to show here in what this difference consists. Some that theoretically are classed in this second division really belong to the third, namely, those which ignore the existence of any other societies whatever, and do nothing to encourage or foster them. In this third class belong the larger number of the state societies.

To change this unsatisfactory condition is the first and most important work to be done in the organization of the profession of our country. Touching on this we quote from the report of the Committee on Reorganization:

"No successful organization of the profession is possible without the mutual coöperation of the state societies. There is at present no close relationship among the state societies; each is an independent body recognizing no other, and no concert of action among them regarding measures of mutual importance is possible under present circumstances. It will be accepted as an axiom that before such a federation can become an established fact a common plan of organization must be adopted by all. To successfully accomplish this and have such a common plan accepted by each state society, it will be necessary that each of these bodies shall be willing to sacrifice for the common good certain minor details in their present plan of organization, certain preconceived ideas as to what are the objects of the state medical society, and existing methods of procedure of minor importance. For without a willingness on the part of all to make some minor sacrifices, there can be no successful issue to the undertaking, and present chaotic conditions with their resulting weakness will continue to prevail."

In this part of the report the Committee was making a plea: 1, to get the American Medical Association to reorganize so that it might be a body in which the state societies could affiliate, and 2, to have the state societies reorganize on a more or less uniform basis, so that a federation might be possible. The recommendations as regards the American Medical Association were adopted by that body. The state societies are asked to adopt that part of the recommendations which refer to them.

There must be a uniformity of organization as regards certain fundamental principles before a true representative federation is possible. It will be impossible to get a truly representative national body made up of delegates from the state societies in the way the latter are at present organized. Delegates to the House of Delegates of the American Medical Association from a state society in Classes 2 or 3, as defined above, would not be representing the profession of the state, because the body that sent them would not represent the state, but only one independent society in the state.

Division of the State Society into Two Branches.

While it is immaterial whether or not the state societies organize alike in every particular, it is important that they conform as regards certain fundamental propositions. These are specified in the recommendations made by the American Medical Association, and are 1, separating the annual session into two branches, legislative and scientific; and 2, making membership in the county or district society carry with it membership in the state society. As regards the first proposition, the wording of the recommendation to the state societies is "to divide their annual meeting into two branches, legislative and scientific; the legislative branch to be as small as is compatible with representation from all the county societies, and to be composed of delegates elected by the county societies."

While seven state societies already have two distinct branches, in none of the others does this division exist. In the annual gathering of these there is no distinct business body, nor, for that matter, a distinct scientific body. On the contrary, the annual meeting is simply a general one for any and all purposes, and is made up of those who come without any delegated authority. The meetings are not representative, but are liable to be dominated by those living near the place of meeting, or by those coming from a large city, if there is one in the state. Such meetings may be, and often are, controlled by those who want a certain set of officers elected, or by those who want some pet measure carried or endorsed. Much feeling and almost a disruption of a

certain state society occurred a few years ago because a large number went from a certain town, packed the meeting, and elected their favorite as President. Such occurrences would be impossible if there were a small legislative body to transact the business of the association, made up of delegates elected by the county or district societies.

While the annual meetings are unrepresentative, they are, as a rule, too large to be able to deliberatively consider important questions. This is especially true in the larger states. Further, those who attend the meetings do so for scientific and social purposes; very few have the inclination to take part in, or will give time to medico-political discussions, or to the consideration of business or legislative problems. If such matters are brought before the meeting, there is always developed an impatience on account of time wasted, and thus important topics are not deliberatively considered but are acted on with undue haste; or, what is more common, they are not acted on at all but laid on the table or indefinitely postponed.

We are only repeating what everyone knows who has attended the average state society meeting. It is exactly the same condition, only in less degree, that has prevailed for years in the annual meetings of the American Medical Association, but which has been remedied by the creation of the House of Delegates.

Aside from the fact that in such meetings the necessary consideration of important business and medico-political matters are interfered with, the scientific and educational work is also greatly hindered. There is always some legislative work brought before the meetings; if nothing more there are usually some vexatious ethical troubles, besides business pertaining solely to the society itself, and the election of officers—the latter often no small consumer of time. The great majority of those present have only an indifferent interest in these matters; they have attended the session for scientific work and it is not just to ask all of them to waste their time in an interminable debate on matters in which they are not interested. In brief, the general meetings are unsatisfactory either as business bodies or as scientific gatherings; hence, neither one nor the other of these functions is properly exercised.

The Business Body.

It will no doubt be appreciated that when the American Medical Association recommends the division of the state society into two branches, it is really asking that there be created a small representative body which shall have full control of all business and legislative matters, the scientific work of the general annual meeting going on as now, although, it is hoped, improved in certain particulars. The business body should be as small as is consistent with fair representation, and while in some respects there may be much wisdom in a multitude of councilors, the disadvantages of an unwieldy body greatly exceeds the advantage of the little extra wisdom that may be obtained by large numbers. The smaller in reason a deliberate body is, the more effective it is for work. If possible, the membership of the legislative body of the State Society should not exceed 50 or 75. The difficulty to be met, however, is that there are more counties in the majority of states than this number and it is absolutely necessary that every county society have a representative. But it often happens that in many states a county in which there is a large city is liable to dominate the State Society. In these cases there is usually a jealousy or rivalry between the country and city. The little county society, the one to be most encouraged, is liable to feel that its influence is dwarfed by that of the larger. For these reasons and for the purpose of making the legislative body small, it would be well if in many states the apportionment of delegates might be made large, say one delegate to every 100 members or fraction of that number. In this case the small county society would have an abnormally large proportionate influence, but there would be no harm in this. If this ratio were adopted in Illinois, for instance, the Chicago Medical (Cook County) Society would be entitled to but 10 delegates and as there is no other county society in the State with a membership exceeding 100 and as there are 102 counties in the State, the business body of the Illinois Medical Society would consist of 111 members if every county were represented. The Chicago Medical Society might object, but as it will probably be found that in those counties in which there is a live active society there will be at least three-fourths of the regular profession of that county on its membership rolls, and as not one-third of the regular profession of Cook County belong to the Chicago Medical Society it might stimulate this body to do a little more active work in organizing the profession in its territory than it is now doing. At present it would have as much influence as 10 county societies. If it were built up as it should be and had three-fourths of the regular profession on its rolls it would have a representation equal to 25 or 30 counties, even with this high apportionment.

In Pennsylvania, which in a certain way has the county society plan and the business body separate from the scientific nominally, there would be under this apportionment three counties entitled to more than one delegate, namely, the Philadelphia County,[1] 8; Allegheny County, 4; and Lancaster County, 2. As there are 67 counties in the State the business body would be composed of 78 members, which would be sufficiently large to be representative.

It may be asked why it is necessary to create these business bodies now, why the methods of the past should not be allowed to continue. In reply it may be said: 1. In the past the majority of the state societies have been, to all intents and purposes, purely scientific bodies and, as such, they had no need of the proposed business branch. In the future it is expected that each state society will widen its scope of action, coöperate with other state societies, and assume all the functions which a body representing the profession of a state should assume. 2. While most of the state societies, in annual session, are now too large to calmly deliberate on the important questions that should and do come before it, yet in the future, if the recommendations of the American Medical Association are adopted, their membership and the number in attendance at the annual meetings will greatly increase. 3. A body assuming to pass judgment on matters affecting the profession of the whole state, and maintaining for itself the right to appear before a legislature in behalf of all the physicians of the commonwealth, or in any way claiming to be representative, should be composed only of men duly delegated to speak for those they assume to represent, and the method of their appointment should be such that even the most obscure reputable practitioner can have his part in their selection.

1. At the annual meeting of the Philadelphia County Medical Society, January 15 last, it elected 150 delegates to the Society of the State of Pennsylvania. The number from this county society of itself would make a body too large for deliberative work. What then must be the business body if every society in Pennsylvania should send its full quota?

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EXPERIMENTAL INVESTIGATIONS RELATING TO SURGICAL OPERATIONS.

Surgical anatomy, normal and pathological, has received and is receiving much attention. It occupies a conspicuous place in literature, almost overshadowing wholly what Crile calls surgical physiology, the importance of which from a surgical standpoint does not seem to be appreciated as much as desired. Yet it is very clear, even self-evident, that many surgical operations require ready and exact application of definite knowledge of human functions, gained to a large extent by animal experimentation. It is with this idea that George W. Crile of Cleveland has been carrying out a number of experimental researches bearing upon problems connected with surgical operations. A good example of the sort of work he is doing is furnished by the interesting essay from his pen printed elsewhere in this issue. Studies in the laboratory of various phenomena produced experimentally are made to yield conclusions of direct practical value in the operating room. The larger essay in which Crile records the results of his more extended work in this field was awarded the Alvarenga prize for 1901 of the College of Physicians of Philadelphia.[1] It may be of interest to briefly note the more important phases of Crile's work. The effects of dividing or mechanically irritating the vagus nerves naturally come up for consideration in various operations on the neck. It seems that the statements in the literature upon these points vary considerably. In his experiments on dogs Crile finds that mechanical irritation of the vagus nerve causes more or less slowing of the respiration and in most instances a rise in blood pressure. Sometimes an inhibitory effect was noted, but in no case was there complete inhibition of the heart, even when the vagi were mechanically destroyed. Division of one vagus has but little effect upon either respiration or circulation. Severance of both vagi causes rise of the blood pressure and increased frequency of the heart's action; while the respirations are lessened in number, the amplitude of the excursions is so much increased as to practically counterbalance the slowing. "The respiratory mechanism was much more affected than the circulatory, and exhibited early signs of exhaustion." Several clinical cases are cited in which a close correspondence was noted between the effects of necessary operative lesions of the human vagi and those mentioned in the foregoing, from which fact it is probably permissible to infer that the surgeon need not be deterred by fear of the disastrous effects of vagal irritation and division from executing various mutilating maneuvers necessary for hemostasis, complete removal of malignant tumors, etc.

A large series of experiments on dogs were made in order to study the effects of intravenous infusion of saline solution, and the results are discussed fully under various headings. The most important conclusions are that when blood pressure is lowered by a not too excessive hemorrhage, saline infusion promptly restores the lost pressure, but that when the vasomotor mechanism is destroyed infusion has no effect. If the peripheral resistance is lost from "shock" no amount of infusion is able to restore the lost pressure—infusion is without avail then because one of the necessary factors to establish blood pressure is removed. Between the two extremes here given, infusion is effective in proportion to the impairment of the vasomotor innervation. Crile's experiments and discussion of these weighty questions will interest greatly surgeons and others; the question is too broad for further notice at this time.

The physiologic action of cocain and eucain when injected into the tissues is considered also.[2] Among other interesting observations it is especially noteworthy that the injection of these substances into a nerve-trunk promptly "blocks" both afferent and efferent impulses. General anesthesia does not prevent the passage of afferent stimuli that may produce shock. Cocain or eucain applied upon the medulla or fourth ventricle suspends action of the respiratory center. The "blocking" action of cocain and eucain makes it possible to operate upon the extremities without pain and shock by injecting a one per cent. solution into the supplying nerve trunks—a method of signal value where general anesthesia is contra-indicated. Crile cites a number of interesting illustrative cases; perhaps the most striking are two amputations of the shoulder. Inhibitory reflex arrest of respiration and heart's action may follow manipulations of the pharynx and larynx; cocain or eucain applied to the mucous membrane wholly prevents such reflex inhibition ("laryngeal collapse"). From the fact that shock may be avoided because afferent impulses are blocked by cocain or eucain it may be permissible to suggest the use of these substances by intraneural or subarachnoid injection as preventives of "shock" in cases of crushing and other injuries that come under observation immediately after the accident.

In the last section of his essay Crile deals with the effect of temporary closure of the carotid arteries. The literature is reviewed and then the experimental and clinical observations are presented. In order to control hemorrhage in various operations upon the head and neck Crile recommends a preliminary injection of atropin (1/100 grain) in order to prevent possible inhibition

1. Problems Relating to Surgical Operations, Philadelphia, 1901.

2. See first article in this issue.

of the heart from involvement of the vagi; the temporary clamping of both common carotid arteries by means of a special device; to prevent entrance of the blood into the lungs the patient should be placed in the Trendelenburg posture; and in operations involving the pharynx or larynx the application of cocain to the mucous membrane. In this way operations of the head and neck may be rendered so much safer "as to greatly increase surgical possibilities."

The industry, ingenuity and judgment manifested in Crile's experimental study of surgical physiology and in the clinical application of the results seem to make the work outlined of much practical value and interest to surgeons. The researches illustrate well the great value of the experimental method in this special field.

ORGANO-THERAPY IN UREMIA.

Since the work of Bouchard showed so clearly the toxicity of the substances normally eliminated by the kidneys, and retained under conditions of renal insufficiency, other possible agencies in the production of the condition resulting from such renal insufficiency have been overshadowed and lost from view. Recent studies of the functions of the kidney that are other than eliminative lead to a reconsideration of the subject, and suggest that perhaps after all the retention of normal metabolic products is not the only factor, possibly not the chief one. That the kidney produces an internal secretion that is of further use within the body is scarcely to be doubted, *a priori*. Probably among the products of cell activity in every tissue are some substances that are available, if not essential for other tissue cells. In the kidney, however, the excretory function is so prominent that its other possible functions have escaped general observation, both in experimental and clinical studies.

The experiments which have demonstrated the importance of the "internal secretion" of the kidney are of two chief types. First, those in which the renal tissue is reduced to a minimum by operative procedures. Bradford[1] found that removal of two-thirds of the entire kidney substance in dogs did not cause death, but if three-fourths were removed death followed in one to six weeks through asthenia, but not from uremia as ordinarily manifested. When so little as one-half of one kidney remained the elimination of urine was normal both as to quantity and solids. In spite of the normal urea elimination in such cases a marked increase in nitrogenous extractives occurs in the tissues, especially in the muscles. As the amount of these substances is much greater than that resulting from simple urinary retention, and as there is much wasting of the tissues, Bradford suggests that on account of the absence of the internal secretion of the kidney there results a breaking down of the muscles and to a less extent of the other structures of the body.

Vitzou[2] has worked with the other method, which studies more directly the effect of the hypothetical internal secretion. He followed up the experiments of Brown-Sequard and d'Arsonval, who had showed that dilute extracts of renal substance prolonged the life of animals made uremic by double nephrectomy, and of Meyer, who found that the Cheyne-Stokes respiration of dogs under similar conditions was arrested by injections of renal juice, normal blood, or blood from the renal vein. Vitzou found that blood from the renal vein had striking effects on uremic animals. The symptoms were promptly stopped, and for a time the animal would appear quite normal. Repeating the injections whenever uremic symptoms returned prolonged the life of animals deprived of both kidneys, and which usually died in twenty-four to forty-six hours, to over one hundred hours, in one case to one hundred and sixty-four hours.

From these experiments it seems that the kidney turns into the blood some substance which seems to act as an antitoxin to some other unknown substance, which in turn is either toxic itself or acts, as Bradford thinks, by causing tissue waste. Organo-therapy in renal disease suggests itself at once as the natural outcome. It is significant that the form of nephritis associated with most marked uremic manifestations is the one in which there is the greatest loss of renal tissue, the chronic interstitial nephritis, and so the theoretical results obtain confirmation. A few trials of defibrinated blood from the renal vein of goats have been made in nephritics, and it is stated that amelioration of the symptoms followed. As yet such treatment is not generally practicable, and much more experimental data must be obtained, but the hope of aiding the otherwise hopeless nephritic should be sufficient incentive to much work along these lines.

1. Journal of Physiology, 1899, xxv, p. 18.
2. Jour. de Phys. et de Path. gén., 1901, iii, 901 and 926.

SKIN ERUPTIONS AND VISCERAL LESIONS.

One of the most interesting practical advances in our knowledge of disease in recent years has come from the gradual development of the doctrine that internal viscera are often affected by the same virus that causes cutaneous eruptions. Until within the last ten years it was the custom to consider skin diseases under ordinary circumstances independent of internal organic affections. The discovery that certain skin lesions such as peliosis and purpura were evidently of rheumatic origin and that even such ordinary skin diseases as roseola, urticaria, erythema and certain forms of herpes were so frequently associated with rheumatism as to be surely connected with it etiologically was the first definite advance in knowledge that pointed out the intimate relation of the skin to affections of organs deeper seated.

More recently Osler described various visceral complications that occur with erythema multiforme. At Heubner's clinic in Berlin it was noted that an intra-abdominal rub, probably due to the friction of slightly affected peritoneal surfaces of intestines upon each other, could be often felt in so seemingly superficial a skin affection as measles. Koplik's description of intra-oral spots in

this same disease probably points to the fact of a rather general involvement of the mucous membranes of the gastro-intestinal tract in the affection. In a word, it has become ever clearer and clearer that the skin seldom suffers alone in any disease and that lesions at least analogous to those on the skin occur in various internal organs during the course of cutaneous eruptions.

It is not surprising, then, that Van Harlingen[1] in a review of the recent literature as to the nature of herpes zoster admits that in a certain number of cases various visceral complications may accompany this form of herpes. These internal complications consist, so far as our present knowledge goes, mainly of paralyses of sensory or motor nerves, inflammations of the pleura and peritoneum, articular involvements, and occasionally visceral ailments analogous to the skin lesions. The later advances in our knowledge of herpes zoster, especially its frequently reported occurrence in groups in recent years so that it assumes something of the character of an epidemic, has prepared medical men for the acceptance of the doctrine that herpes zoster is a specific fever. It has, of course, the prodromal period of malaise, temperature and discomfort; then a characteristic eruption with remission of the symptoms and a definite course to run before cure is complete. Van Harlingen calls attention to Head's statistics of the recurrence of the disease, only four times in 400 patients, as probably indicating that one attack of zoster provides a modicum of protection against subsequent attacks. Admitting, then, that herpes zoster is a specific fever, it is to be expected that viscera would also be affected by the virus of the disease and another link in the chain connecting cutaneous affections with visceral lesions is complete.

Dr. Roland Curtin[2] has just presented a series of cases that seem to demonstrate the occurrence of visceral lesions in patients suffering from typical herpes zoster. In nearly one-half of his cases the internal pathologic condition preceded the cutaneous appearance of the zoster. In most of the others the developments, internal and external, seemed almost simultaneous. The joint involvement in one of his cases is especially interesting because it carries with it some confirmation of the theory that arthritic inflammatory conditions are usually not diathetic but specific in nature and origin. The trend of modern medical thought is evidently towards the acknowledgment of specific viruses as the most frequent cause of disease and the effects of each virus is not as distinctly localized as has been thought. Typhoid fever is not merely in the intestines, nor measles in the skin and external mucous membranes, nor rheumatism limited to serous membranes, any more than so-called skin diseases are confined to the cutaneous tissues. In all disorders specific affections of parts distant from the original localization may be looked for and they serve to explain many hitherto obscure symptoms.

1. Amer. Jour. Med. Sciences, January, 1902.
2. Amer. Jour. Med. Sciences, February, 1902.

EARLY DIAGNOSIS OF CERVICAL CANCER.

Much recent literature on cancer of the cervix, both European and American, has been a plea for earlier diagnosis in this common and deadly form of uterine disease. Under present conditions patients so often present themselves too late for operative relief that some hospital records show nearly as many cases turned away as are received. Even when operation affords some hope it is generally performed so late that the necessary extensive removal of tissue gives a very high primary mortality and in the immediately convalescent cases renders great the chance of recurrence. The figures presented by even the more hopeful writers are disheartening—the freedom from recurrence is calculated as not higher than 10 per cent. There is now little to expect in the way of improved technic, so, barring any discovery of a non-surgical cure, the only hope is in the earliest possible diagnosis.

Early diagnosis of cervical carcinoma rests clinically upon the investigation of even slight hemorrhages. The other classical symptoms of pain and odorous discharge mean, respectively, that the cancer has spread beyond the actual cervical tissue and that the diseased tissue has become secondarily infected. Gynecologists insist that the general practitioner has practically the only professional opportunity for early suspecting the diagnosis. He must suspect and immediately investigate every case where there is irregular bleeding before or after the menopause, occurring with or without irritation, such as coitus or douching. The early suspicion of a case is the prime necessity—investigation can then be carried out by clinical or laboratory examinations. However, the matter by no means rests entirely in the physician's hands, because he can not compel a woman to consult him about slight "bloody shows," more especially if the hemorrhages occur near the climacteric, which is popularly supposed to account for any irregular bleeding during a considerable period of years.

The duty of the family physician lies in educating women whose confidence he possesses, so that they may be insured as much as possible against the unrecognized inroads of cervical cancer. He should tactfully attempt the teaching of common-sense watchfulness with avoidance of hysterical worrying about the matter. To this end he must be willing to confidently assume the responsibility of declaring whether or not there is cause for alarm.

AN OBJECT LESSON IN ANTI-VACCINATION.

A Boston anti-vaccinationist crank recently exposed himself by deliberately visiting the isolation hospital and is now suffering from the effects of a severe attack of smallpox. Another, one of the two physicians in the city of Camden, N. J., who opposed vaccination, died the other day of the same disease. The Wisconsin anti-vaccination fanatic who deliberately exposed himself and others appears to have so far escaped, but the town where he lives is suffering from an epidemic which may

be largely due to his agency in disseminating the pest. It is a pity that he is apparently immune—perhaps by vaccination in infancy—not that one wishes to see him suffer, but because his escape is advertised by him as proof of his theories, and as a result the health officials are embarrassed or even hindered in their work in combating the epidemic. If his exposure had meant only danger to himself the case would be different, but his carrying the infection to others and his example and teaching are under the circumstances nothing less than criminal. It is said that in London where the present pandemic of smallpox is raging, there is, in view of the approaching coronation festivities, a panic among those who expected to share the profits from the crowds attracted by the occasion and that insurance companies are charging high rates for insurance against smallpox. The anti-vaccination propaganda has had its way so much in England that a very considerable proportion of the people are unprotected. In this country it has perhaps been less effective, but present conditions indicate that we are none too well off in this respect. If a few more of the blatant anti-vaccinationists would only furnish an object lesson like the eastern physicians mentioned it could perhaps be said that they did not suffer or die in vain.

IODOPHILIA.

Iodophilia is the reaction which certain leucocytes give when a dry blood-film is brought in contact with a solution of iodin and potassic iodid in mucilage of gum arabic. Normal leucocytes are colored bright yellow, but in certain pathological conditions, such as septicemia and uremia, the polymorphonuclears contain reddish-brown granules, or show a diffuse brownish coloration. Similarly colored larger and smaller masses may occur outside the corpuscles. The number and the grouping of the intracellular granules and masses may vary. They are mostly irregular in form. In their recent study of iodophilia Locke and Cabot[1] point out that Ehrlich first called the attention to the occurrence of iodophilia, especially in pus. Since then its occurrence in blood has been studied by Galritschefsky, Czerny, Lievierato, Goldberger and Weiss, and others. From their observations on over 400 cases Locke and Cabot conclude that extracellular brown masses are found in normal as well as pathologic blood, and that only large numbers are to be regarded as of pathologic significance. They are increased in diabetes and sometimes in chronic suppurations. But the intracellular masses are probably always pathologic, although they are not characteristic of any special disease or condition, being, however, most constant in sepsis and purulent infections. The authors claim that iodophilia is a certain sign that the patient is ill. It occurs also in bacterial toxemias, in uremia, in respiratory disturbances, and in grave anemias. Much work remains to be done before the exact significance and the actual diagnostic value of the test can be fully determined. The method of examination for iodophilia is very simple and the staining with the iodin solution does not at all prevent a more general examination of the blood at the same time. It does not seem that the nature of the substance or substances giving the reaction has been determined. Glycogen gives a similar reaction with iodin, and so does amyloid material. At the present time iodophilia may be classed with phenomena like leucocytosis, fever, and the diazo-reaction, as a sign of the presence of morbid processes within the body, and as such it would seem to merit careful investigation in routine examinations of the blood.

1. Journ. Medical Research, 1902, January, 25-42.

IOWA MEDICAL LAW AND OSTEOPATHY.

An Iowa judge has issued a mandamus writ compelling the State Board of Medical Examiners to grant certificates to graduates of an osteopathic school. The grounds for this action, as given, are apparently that osteopathy is excepted by the statute from the laws regulating the practice of medicine, that the Board of Examiners have no right to establish any minimum standard for schools of osteopathy, and that the standing of a school in good repute could not be estimated by the Board from its actual character, but only from the opinion of osteopaths and others in regard to it. It is a little puzzling to see why the statute should give the Board anything whatever to do with licensing osteopaths if the legislature did not really consider that they had something to do with the practice of medicine. The function of the Board is judicial throughout; it is not merely executive, and that it should be made so for the the benefit of the osteopaths alone does not seem reasonably within the intent of the legislators. The judge, it appears to us, has made a strained interpretation of the statute; he ignores the very obvious implication of the act in putting the licensing of the osteopaths in the hands of the Medical Examining Board. His ruling, moreover, that the osteopathy act conferred no special privileges and was therefore not unconstitutional because the study of osteopathy is open to everyone, seems unreasonable as here applied. The legislature might enact that no one should vote who is not an osteopath and, according to this judge's construction, it would be constitutional, because everyone is privileged to adopt that alleged profession. He would "know of no legal reason why every citizen of Iowa can not bring himself within the provision of the act in question and thus secure the privilege provided thereby." He would probably find some precedent for this, but not in recent American law. His decision is, as far as it can be, a practical annulment of the medical laws of Iowa. It is to be hoped that it is not a final adjudication of the matter. If it is, it becomes the duty of the medical profession of Iowa to exercise their influence and see that legislation is secured that will not be possible to misconstrue in favor of ignorance. That they can do it, if they earnestly work for it, need not be questioned. But our inactivity in the past has led the lower grade of politicians—and among these we too often have to include the elective judges—to court the favor of blatant quacks and count for nothing the influence of educated physicians. It is time they were taught better.

MOSQUITOES AND MALARIA.

The mosquito has long been suspected of being a factor in the production of malaria, and during the past seven

years scientific methods have been employed by investigators in different malarious countries to determine whether this suspicion were true. The proof that the mosquito is an essential factor in the production and spread of malaria is now sufficiently conclusive to satisfy all biologists and physicians who have closely followed the publications upon the subject. The argument is still advanced by the laity, and even by some members of the medical profession that malaria can not be caused by mosquitoes because mosquitoes are abundant in many places where malaria does not prevail. Not all mosquitoes are carriers of malarial infection, but only those belonging to the genus anopheles. While it is true that anopheles are present in all places where malaria is rife, it is also a fact that anopheles may be and are present where there is no malaria. Anopheles are harmless unless they bite a person with malarial parasites in his blood. In the middle intestine of the infected mosquito sporoblastic forms of the parasite develop and from these there arise sporozoites which accumulate in the salivary glands and are again deposited in man's body when he is bitten by the insect. It follows then that both man infected with malaria, and anopheles are essential for the propagation of malaria. Celli, one of the accepted authorities upon the subject, says: "Down to the present time (1900) the hereditary transmission of malaria from mosquito to mosquito has not been demonstrated experimentally or morphologically." The inoculation of man through the proboscis of the mosquito at the time of the bite of the insect is the only way in which malaria has been proven to be naturally produced. In northern countries, where malaria is not endemic, anopheles have been found by various observers to be quite widely distributed, and they may become infected at any time if a person with malaria is introduced from without. This might occur if a soldier or other person who carries the malarial plasmodium in his blood, returns to his home after living in a malarious country. It is said that every case of malaria investigated by the Massachusetts State Board of Health during the past ten years has been traced to the presence in the neighborhood of Italian laborers. The mosquito must, therefore, be considered as only one of the essential factors in the spread of malaria, and in the effort to eradicate the disease the protection of the mosquito from infection from man is of almost equal importance with the protection of man from the bite of the infected insect.

Medical News.

CALIFORNIA.

For failure to notify the authorities that he had smallpox Dr. Malcolm K. McKenzie was removed from the Kern City Board of Health.

Another Medical College.—Physicians interested in starting a medical college in Oakland have secured $3000 toward the building fund, and state that on April 1 work on the new building will be commenced.

Club Practice.—Sacramento Fraternal Hospital Association was incorporated, February 5. Its object is to give members of fraternal orders and their families, and any other who may wish to purchase stock, medical care at reasonable rates.

New Hospital in Oakland.—The Catholic Sisters of Providence have purchased for $12,000 a site 350 by 221 feet whereon they will erect a hospital which will afford clinical facilities to the Oakland College of Physicians and Surgeons.

Expectoration Ordinance Enforced.—More than fifty citizens of San Francisco were arrested for spitting on sidewalks in violation of the ordinance prohibiting expectoration in public places. Since the ordinance was passed in 1897, it has been enforced only once, and then the offender was fined $5, and on a second offense was sent to jail for twenty-four hours.

DISTRICT OF COLUMBIA.

Marine-Hospital Appointment.—Dr. Francis A. Ashford, son of the late Dr. F. A. Ashford, has been appointed resident physician at the marine-hospital at Chelsea, Mass.

Senate Confirms Rixey's Appointment.—The Senate has confirmed the nomination of Medical Inspector Presley M. Rixey, U. S. Navy, to be Chief of the Bureau of Medicine and Surgery in the Navy Department, with the rank of rear admiral. Surgeon-General Rixey succeeds Surgeon-General Van Reypen, just retired.

Health of the District.—The report of the health officer for the week ended February 8 shows the total number of deaths to have been 110, of which 59 were white and 51 colored; the death-rate per 1000 for the whites was 15.1 per cent. and for the colored 29.5. There were 4 cases of smallpox, 38 of diphtheria, and 27 of scarlet fever.

Vacancies in Army Medical Service.—Examination of applicants for appointment as assistant surgeons in the army will be resumed by the Medical Board in Washington, on April 7. The Board will remain in session until all the vacancies are filled. Full information concerning the nature and scope of the examination will be furnished on application to the Surgeon-General of the Army, Dr. George M. Sternberg. At present there are sixty-three vacancies in the medical corps.

To Regulate Surgery in the Navy.—The Secretary of the Navy has rendered an opinion on the question involving the rights of officers and men of the Navy in the matter of submission to surgical operations decided by the medical officers to be necessary for restoration to health and duty. The question arose from an inquiry by Surgeon O. D. Norton of the *Monadnock* for information as to the authority of medical officers in such cases. The Secretary rules as follows:

> While the Department will not undertake to lay down as a general rule that a man must, particularly in cases involving risk of life or loss of limb, submit to a surgical operation, it can not, on the other hand, accept the opinion of the junior squadron commander on the Asiatic Station that it is optional with the man concerned whether or not he shall submit to such an operation in the course of medical treatment. By a judicious application of the principles set forth in an endorsement of the Bureau of Medicine and Surgery, friction in the cases of the character therein referred to will probably be avoided. In ordinary cases, when, in the opinion of the medical officer, after consultation, if advisable, with other surgeons available, it is deemed necessary, in order to restore a man to his capacity for the performance of his duties, that a minor surgical operation be made upon him, he can be required to undergo the same, under the penalty of punishment, as a sentence of court-martial, in the case of his refusal to submit thereto. If the particular case under consideration was of this character, disciplinary action would have been proper upon the report, made to the commanding officer of the *Monadnock*, by the surgeon, of the private's disobedience of orders.

ILLINOIS.

New Cottage Hospital Opened.—The patients were transferred from the old into the new Cottage Hospital, Peoria, February 3.

Julia F. Burnham Hospital, Champaign, has received $2000 bequeathed by the late Mary Ida Harris, to which her father, B. F. Harris, has added $1000 as his personal contribution.

Semi-Centenary of Practice.—Dr. Clinton Helm, Rockford, who will complete his 50th year of practice this month, has been tendered a banquet by the Winnebago County Medical Society, February 25.

Hospital for Incurable Insane.—The State Hospital for the Incurable Insane at Bartonville, near Peoria, was formally opened February 10, and 100 patients from the Jacksonville hospital were installed in their new home.

Chicago.

The Bridewell Clinic.—Dr. Heman Spalding suggests that a staff of internes be assigned to the Bridewell and that that institution be made use of as a place of clinical study. Medical classes should be taken out there and receive instruction through actual work.

Chicago Eye, Ear, Nose and Throat College.—The faculty held its annual meeting February 10. The following were

named as Board of Directors for the ensuing years: Drs. William A. Fisher, president; Adolphus G. Wippern, vice-president; John R. Hoffman, secretary; Thomas Faith, and Harry W. Woodruff.

Reforms at Dunning.—The County Commissioners are planning many reforms at the county institutions, which include a reorganization and enlargement of the medical staff, relief of the overcrowded condition of the hospital for the insane, and eventually the erection of a series of cottages to replace the present building.

Northwestern University Medical School.—The faculty has set aside the week of June 16 as "alumni week." There will be general and special clinics of all kinds, private operations, ward visits, ward walks; men of international reputation will hold clinics at Mercy and Wesley Hospitals, and the alumni will be given special opportunity to see and study cases, for which they express a desire. It will be a week of concentrated post-graduate work. The social side of the week will consist of the banquet, small luncheons and dinners, receptions by the wives of the faculty, etc.

New Mercy Hospital Amphitheater.—The new clinical amphitheater in Mercy Hospital was dedicated, February 12, under the auspices of the Chicago Medical Society. Dr. John B. Deaver, of Philadelphia, made an eloquent address, eulogizing the hospital as a sign of the great strides by which science is advancing. The occasion was made further notable by the graduation of fourteen nurses from the training school. Dr. John H. Hollister presented the diplomas with words of wise counsel and hearty well-wishing. The introductory addresses by Prof. Robert D. Sheppard and Dr. Nathan S. Davis, Jr., were of a historical character. This fine amphitheater has been built at the expense of Northwestern University at a cost of $25,000. It is beautifully finished and well equipped. The following morning the first clinic in the building was held by Dr. Deaver, who performed an operation upon the gall-bladder and an appendectomy.

INDIAN TERRITORY.

Mayor Ejected from Territory.—For refusing to comply with the law requiring physicians to receive certificates from the Choctaw Board of Health, before practicing medicine, Dr. W. A. Abbott, mayor of McAlester, has been removed from the territory and escorted to Oklahoma City by the chief of police.

Health Ordinance.—The city of Muskogee has passed an "ordinance to protect the inhabitants of the city from the evils of malignant, infectious and contagious diseases." The ordinance provides for compulsory vaccination, fumigation and disinfection of persons and premises and for the issuance of such rules as may be deemed necessary for the public safety.

Medical Boards.—The Choctaw Medical Board has notified physicians in the Going Snake, Tahlequah and Illinois districts to present themselves at Fort Gibson to be examined as to their professional qualifications.——The Creek Medical Examining Board has ruled that graduates of reputable schools may obtain licenses by presenting their diplomas and paying a fee of $5, but non-graduates must appear before the board and pay $25 for examination.

IOWA.

Certificate Revoked.—The State Board of Health has revoked the license of Dr. Samuel C. Kirby, Grand Junction, after a three-days' trial, for incompetency. Dr. Kirby's fine for breaking quarantine last summer was noted in last week's Journal.

The Board's Ultimatum.—At a meeting of the State Board of Health, February 8, a resolution was adopted giving the local authorities of Des Moines 17 days to demonstrate their ability to deal with the smallpox situation. In the event of their failure successfully to do this, the board will convene in special session to take such action as may be thought best for the public health.

Public Gatherings Prohibited.—The city fathers of Des Moines have at last become aroused to the fact that the public health is in danger from smallpox, and has ordered all churches, theaters, lodges and other public gatherings prohibited during the prevalence of the disease. It has also ordered "that the city clerk notify all schools, and private parochial colleges, to prohibit the attendance of all pupils who are unable to show vaccination certificates from some reputable physician. Also that the managers of hotels, boarding-houses, business houses, or stores be requested to require employes to show vaccination certificates." Orders were given to employ 100 officers to establish a perfect quarantine over the 180 infected houses, and to employ as many physicians as the city physician desires to aid him in enforcing immediate general vaccination.

MARYLAND.

Deaths in Baltimore.—For the week ended February 15, the deaths were 232, the largest number being from pneumonia, namely 27.

The Woman's Medical College, Baltimore, celebrated its twentieth anniversary, February 22. Addresses were delivered by Drs. Louise Erich, W. Milton Lewis, W. F. Skillman, Henry Lee Smith, Henry P. Hynson and Francis M. Chisolm.

Annapolis Hospital.—A meeting was held at Annapolis, February 9, to consider the subject of establishing a hospital there. A board of lady managers was selected, and it was decided to erect a hospital to be called the "Emergency Hospital." A number of accidents have occurred which could be treated only after being taken by railroad to Baltimore.

Detention Hospital.—Health Commissioner Bosley has secured an old building on North Street, Baltimore, as a place of detention for smallpox cases until they can be sent to the Quarantine Hospital. The building is being comfortably equipped and furnished. The commissioner's action was made necessary by the mayor having forbidden suspects to be kept at the City Hall annex.

Results of November Examination.—The statistics of the last state medical examination, November 6 to 9, have been made public. There were 30 applicants, 2 of whom withdrew. of the other 28, 23 received an average of 75 and passed and 5 failed. The highest percentage, 94 1/3, was attained by a colored graduate of Rush Medical College. The 3 women who came up for examination, passed.

Gift to Johns Hopkins University.—The friends of the Johns Hopkins University have been gratified by the present to that institution by a number of public-spirited and wealthy citizens of Baltimore of a large tract of land in the northern suburbs sufficient for the growth and development of the University for a long time to come. Thither the university will be removed as soon as suitable buildings can be provided.

Souvenir for Dr. Gilman.—The alumni of Johns Hopkins University are preparing a unique gift for Ex-President Gilman, namely a handsomely bound book containing the autograph of every graduate of the institution. The silver jubilee of the University was held on February 21 and 22. A general reception was held on the evening of the first day, and the alumni held their meeting on the following evening. The laboratories and hospital were thrown open to visitors.

Personal.—Dr. Henry J. Berkley, clinical professor of psychiatry at the Johns Hopkins Medical School and author of a work upon that subject, has met with an accident which will probably cost him the sight of one eye. While working on an instrument in a shop in Baltimore, a piece of steel flew into the eye, injuring seriously the iris and cornea.——Dr. S. S. Maynard has been elected physician of Montevue Hospital for the Insane at Frederick.——Dr. William W. Goldsborough, a member of the legislature, will begin next month the publication of the *Caroline Sun*, at Ridgely, Caroline County.

Maryland Woman's Quarter Club.—As the result of the public meeting held at the Johns Hopkins University, January 28, and the statement of Dr. William Osler then made, that the neglect of the 10,000 consumptives in Baltimore is a disgrace to the city, an association has been formed, called the Maryland Woman's Quarter Club, whose purpose is the raising of funds to build a sanatorium for consumptives. The club was incorporated February 14, and as the name implies, 25-cent subscriptions will be asked for. A thousand subscription books have been printed and circulated, each containing 20 coupons, and these coupons are to be given in receipt for the subscriptions. Mrs. Robert Garrett has consented to act as treasurer for larger amounts, and everything indicates a great success. The purpose is to erect a state sanatorium in the mountains of Maryland, from which the greatest benefits may be expected.

MICHIGAN.

Harper Hospital, Detroit, receives $10,000 bequeathed to it by the late Gen. John E. King.

Health Appropriations.—The health commission of Detroit has made its estimates for 1902-1903. It asks for $38,638, or $2893 more than it asked for last year. Of the amount asked for, $5000 is to be used in the conduct of a careful quarantine system.

Battle Creek Sanatorium Burned.—The Battle Creek Sanatorium, with its five-story hospital, annexes and conservatories, was burned just before daylight, February 18. More than 350 patients and 100 physicians, nurses and servants were sleeping in the building, but thanks to the presence of mind of the employes and the excellent fire escapes, only one death resulted. The property loss will be about $500,000, on which there is about $100,000 insurance.

Comparative Morbidity.—For January, compared with the preceding month, pneumonia and measles were more prevalent; and typhoid fever, intermittent fever, diphtheria and cerebrospinal meningitis were less prevalent. Compared with the average for January in the 10 preceding years, scarlet fever, smallpox and measles were more than usually prevalent; and influenza, consumption, intermittent fever, remittent fever, diphtheria and cerebrospinal meningitis were less than usually prevalent.

Alger Not Entitled to Practice.—In reply to the allegation of a homeopathic member of the State Medical Examining Board that Dr. Warren W. Alger was a competent physician and had failed to pass the board's examination by only 10 points, Dr. Beverly D. Harison, secretary of the board, states that W. W. Alger failed to pass two examinations, receiving respectively 60 and 53, the passing percentage being 75; that he is a graduate of the Independent Medical College, a diploma mill, Chicago, and that, not being legally registered under the medical act of 1883, his application for registration under the present act was refused.

Mortality of Michigan.—There were 2824 deaths returned to the Department of State for January, an increase of 54 deaths over the number returned for the preceding month. The death-rate was 13.5 per 1000 population, the same as for December. There were 442 deaths of infants under 1 year of age, 197 deaths of children aged 1 to 4 years, inclusive, and 910 deaths of persons aged 65 years and over. Important causes of death were as follows: tuberculosis, 200; typhoid fever, 45; diphtheria, 39; scarlet fever, 34; measles, 24; whooping cough, 19; pneumonia, 378; influenza, 64; cancer, 125; accidents and violence, 147. There was a slight increase in the number of deaths from pulmonary tuberculosis and pneumonia, and a considerable decrease in the mortality from diphtheria, as compared with the preceding month.

MISSOURI.

Leper's Keeper Resigns.—Dr. Louis Knapp, St. Louis, who five month's ago renounced the world to become nurse and attendant to Dong Gong, the Chinese leper, has found isolation irksome, and has resigned. He will be replaced by a veteran quarantine nurse.

Enlarge State Hospitals.—Two wings to the main building at State Hospital for the Insane, No. 2, at St. Joseph, are to be erected at a cost of $25,000. State Hospital, No. 3, at Nevada, is to have a new wing to the west of the present building, to cost also $25,000.

Banquet in Honor of Dr. Gregory.—The medical profession of St. Louis, under the auspices of the St. Louis Medical Society, will give a testimonial banquet to Dr. Elisha H. Gregory, who for fifty years has been an active teacher of medicine, probably longer than any other man living. The banquet will be held at the Planters' House on April 17. A large number of guests will be invited, including all the ex-presidents of the American Medical Association, out of compliment to Dr. Gregory, who was president of the Association in 1886-1887. A committee composed of Drs. F. J. Lutz, N. B. Carson, J. P. Bryson, C. H. Hughes, W. B. Outten and H. W. Loeb, has the matter in charge.

Finding of the Tetanus Court.—As a result of the investigation to fix the responsibility for the 13 deaths from tetanus following the injection of anti-diphtheric serum in St. Louis, the committee, consisting of the Board of Health and a committee from the city council made the following report:

Pursuant to the resolution adopted by the Board of Health on Nov. 25, 1901, in reference to investigating the responsibility of the Health Department as charged in the coroner's verdict in regard to the deaths from the use of diphtheria antitoxin, prepared and distributed gratuitously by the city, the board, after having made, jointly with a committee of the city council, a searching and complete investigation of the matter, does find:

1. That the diphtheria antitoxin heretofore issued by the city was prepared, bottled and distributed by and under the supervision of Dr. Amand Ravold, who was employed by the Health Commissioner, with the approval of the Board of Health, in 1894, as consulting bacteriologist, and to have charge of the preparation and distribution of diphtheria antitoxin, and that he was responsible for the quality of material so prepared and distributed.

2. That a horse kept by the city under the supervision of Dr. Ravold, as a producer of diphtheria antitoxin serum, was bled by him Sept. 29, 1901, and on October 2 was found to have tetanus and was killed.

3. From Dr. Amand Ravold's testimony, the poisonous character of the serum from this bleeding of September 29 was known to him, but he failed to cause the serum to be destroyed.

4. That, owing to this inexcusable negligence, the poisonous serum was, in part, bottled and issued to physicians between October 10 and 23, with the deplorable results which instigated the coroner's investigation.

5. That the bottling of the serum proven to be poisonous was done by Henry Taylor, who was janitor of the City Chemist's office, and assistant, at the time, to Dr. Ravold in the work of preparing the serum for issuance.

6. That it does not appear that Henry Taylor was aware of the poisonous character of the serum at the time, but that his course is reprehensible in that he obscured and retarded the investigation by conflicting statements under oath.

In view of the foregoing finding, the board recommends that Dr. Amand Ravold and Henry Taylor be dismissed from the service of the Health Department. And the board further recommends that the city do not hereafter manufacture diphtheria antitoxin.

NEW YORK.

Opening of Syracuse Hospital.—The reconstructed Hospital of the Good Shepherd, Syracuse, was formally opened, February 4. The president announced that William B. Cogswell had given $100,000 to the hospital and had also loaned the institution $100,000 without interest during his lifetime.

Personal.—Dr. Henry L. Elsner, Syracuse, addressed the medical section of the Buffalo Academy of Medicine on "Pneumococcic Cardiac Toxemia and Its Treatment." He was entertained at dinner by Dr. Julius Ullman.——Dr. Charles G. Stockton and wife, Buffalo, sailed for Europe on the S. S. *Celtic*. They expect to go to Egypt by way of the Mediterranean and will return about the middle of April.——Dr. John Byrne, of Brooklyn, and his wife, overcome with grief at the death of seven of their children from consumption, have left their old home in Clinton Street, and have gone to Europe for an indefinite period.

Compulsory Vaccination.—Apropos of the announcement that there are many new cases of smallpox in New York City, comes word that a bill is now before the legislature, making vaccination compulsory. It provides that local boards of health shall enforce the law regarding vaccination in the case of all policemen, firemen, school-teachers and public officers generally; that no person is to be admitted to the National Guard without a certificate of having been successfully vaccinated within five years, and that no firm or corporation employing more than ten persons shall have in their employ anyone who has not been vaccinated within five years. Violation of these provisions is made a misdemeanor, punishable by a fine of not less than $50 or more than $100.

State Cancer Laboratory.—The new state laboratory for the investigation of cancer in Buffalo has been removed into the building donated through the generosity of Mrs. Gratwick. It is a three-story fireproof structure located on High Street, directly opposite the General Hospital. The first floor has a large laboratory and several private laboratories. The second floor has offices, a library, the private laboratory of Dr. Gaylord and the chemical laboratories. The third floor has the bacteriological laboratory, incubation room, a perfectly equipped room with skylight for photography and its dark room, and another room for microphotography. The lighting of all the laboratories is perfect, and they are all fitted with modern appliances. Dr. Gaylord and his associates are to be congratulated on their new home, and New York State may well feel proud of giving its support to scientific research work. The community and the medical profession owe Dr. Roswell Park gratitude, as he was the one who first undertook the establishment of this institution.

Amalgamation of Medical Organizations.—The New York State Medical Association, on February 7, passed the following resolution, appointing a committee on conference: "Whereas, the Medical Society of the State of New York, having appointed a committee to confer with a similar committee from the New York State Medical Association, with the view to a union of the two organizations, and notice of such creation of a committee having been officially given to our President, together with a request that a corresponding committee be appointed by us; therefore, be it resolved that this Council (the executive board of the Association) appoint for the purpose of the conference in question, a committee of five, consisting of Dr. E. Eliot Harris as chairman, and Drs. William H. Biggam, Emil Mayer, Parker Syms, and Frederick Holme Wiggin, to which committee the President is added as a member ex-officio." The committee representing the Medical Society of the State

of New York consists of Dr. Abraham Jacobi, New York; Dr. Albert Vander Veer, Albany; Dr. Abel M. Phelps, New York; and Dr. George R. Fowler, Brooklyn.

New York City.

St. Catherine's Hospital, Brooklyn, at its annual election selected the following officers for its medical board: Dr. Ferdinand G. Kneer, New York, president; Dr. Peter G. Hughes, Brooklyn, vice-president; Dr. Maurice Enright, Brooklyn, secretary, and Drs. Matthias Figueria, Kneer and Enright, executive committee. Separate tuberculosis pavilions are to be added to the hospital this year.

German Hospital Prospers.—During 1901, 3398 patients were treated at this institution, of whom 2695 were non-paying. In the dispensary 21,504 patients were treated in 63,274 visits. The new building, which brings up the capacity of the hospital to 245 beds, was completed in December. Four of the five stories of the building have been dedicated to the memory of deceased friends on payment of $25,000 per floor. Dr. Florian Krug was elected to the medical board in place of Dr. Otto G. T. Kiliani.

New Site for the Woman's Hospital.—Although an option was held on property fronting on Amsterdam Avenue between 109th and 110th Streets, it is now announced that a plot of ground situated in this block, but 200 feet from the avenue, has been purchased by the hospital. There is a frontage of 300 feet on each street, so that 60,000 square feet of space is at the disposal of the architect. The trustees are said to have paid nearly $250,000 for the land, but as they will receive $450,000 for their present site, there will be a handsome balance toward the building fund. The building is to be five or six stories high.

PENNSYLVANIA.

Osteopath Held.—An osteopath of Meadville, arrested on the charge of practicing medicine without a license, has been bound over to the Quarter Sessions Court in $1000 bail.

Homestead Water Condemned.—At a meeting of the local society, February 6, the water supply of Homestead was condemned and a committee consisting of Drs. John Purman, Elmer E. Wible and Edward H. Wood appointed to examine and prepare a report on the subject.

Norristown Hospital vs. Philadelphia County.—In the suit of the trustees of the State Hospital for the Insane at Norristown against the County of Philadelphia to recover for board, clothing and treatment for indigent insane during 1896, a verdict was rendered in favor of the plaintiff for $67,508.

St. Vincent's Hospital, Erie.—At the annual meeting of the trustees, Dr. Chester W. Stranahan was elected consulting physician; Drs. Frank A. Walsh, Thomas Purcell, Charles A. O'Dea and Wallace R. Hunter were elected assistant physicians, and Drs. James H. Delaney and B. D. Schlaudecker, specialist. The bequest of $6000 to the hospital by the late Ada A. Mehl has been cut down by order of the Orphans' Court to $1503.

Philadelphia.

The **Philadelphia Neurological Society** will hold a meeting, February 25, 8:15 p m. Dr. Adolph Meyer, director of the Pathological Institute for the New York State Hospitals will, by invitation, deliver an address entitled "Conditions for Psychiatric Research." Members of the profession are cordially invited to attend. After the address a reception will be tendered Dr. Meyer at the University Club.

Nathan Lewis Hatfield Prize for Original Research in Medicine.—The College of Physicians of Philadelphia announces that the sum of $500 will be awarded to the author of the best essay in competition for the above prize on the subject "The Relation between Chronic Suppurative Processes and Forms of Anemia." Essays must be submitted on or before March 1, 1903. The competition is open to members of the medical profession and men of science in the United States. Address for particulars, J. C. Wilson, M.D., 219 South 13th Street, Philadelphia.

Quarantine to Be Raised.—Dr. John V. Shoemaker, president of the Department of Charities, has recommended to the Department of Public Safety that quarantine, where established in the city, be raised, and that its practice be discontinued. He considers fumigation, sunshine and plenty of fresh air much more effectual as remedies than the close and continuous quarantining of houses. Dr. Shoemaker cites the fact that London some time since gave up quarantining, and that large cities in this country are beginning to recognize the greater efficiency of fumigation.

New Hospital for Jefferson.—Plans are nearing completion by the trustees of Jefferson Medical College by which a new hospital will be built soon. It is proposed to construct a fireproof, seven-story building, fronting on 10th Street, including the site of the old college. There will be space for 250 to 275 beds. Provision will be made for equipment for treatment by the most modern methods. A gymnasium will be provided for the treatment of deformities; sun-parlors will communicate with each ward, and a roof garden will cover the entire building. Provision is made for the J. M. Da Costa Clinical Laboratory and Amphitheater, which will be a gift to the institution from the alumni and friends of Dr. Da Costa.

Medical Laboratories.—The trustees of the University of Pennsylvania have contracted for the erection of medical laboratories, which, it is claimed, will be the largest and most complete in the United States. It is proposed to expend $600,000 upon the building and equipment. Half the sum, including a recent gift of $75,000, is now in hand. The building will be 245 by 340 feet, and two stories in height. It is to contain amphitheaters, demonstration rooms, and physiological, pharmaco-dynamic, pathological and histological laboratories. An unusual quantity of glass will be used in providing for lighting, and the halls, corridors, and stairways will have floors and wainscoting of marble.

Typhoid Fever and Smallpox Situation.—The typhoid fever and smallpox situation showed improvement last week. Of the former there were in the city 154 new cases, of the latter 75. A committee of experts, consisting of Drs. Shoemaker, Tyson, Hare, Henry and Anders recently submitted a report, regarding the quarantining of smallpox, to the Department of Public Safety. The suggestions, which are as follows, were adopted by the department: That as soon as a case of smallpox be diagnosed the patient be sent to the municipal hospital; that the house from which the patient is removed be thoroughly disinfected; that as soon as the inmates of the premises are vaccinated, they be given their liberty. Strict quarantining of the inmates for 18 days has previously been observed. Much, perhaps the whole of the city, is to be recanvassed by the special vaccine corps; lodging-house inmates are being vaccinated at night. The smallpox epidemic will probably cost the city $500,000.

Money for Hospitals.—By the will of the late J. Alfred Kay, the following institutions receive $5,000 each: Pennsylvania Hospital, Germantown Hospital, University Hospital, Jefferson Hospital, Orthopedic Hospital and Polyclinic Hospital, for the purposes of endowing free beds in each institution in memory of Mary Kay. With certain provisions regarding the death of a niece, to whom is left the net income of the balance of the estate, in case she dies without issue, the residuary estate, less $15,000, is to be equally divided among the hospitals already mentioned. Of this amount, $11,000 will be divided in portions of $1000 each among the following hospitals: St. Agnes' Hospital, St. Joseph's Hospital, Jewish Hospital, Presbyterian Hospital, Philadelphia Dispensary, German Hospital, Gynecean Hospital, Howard Hospital and Infirmary, Medico-Chirurgical Hospital, Church Home for Children, and Children's Hospital. Germantown Hospital has received a bequest of $1000 by the will of the late Katharine P. Bockius.

Personal.—Drs. J. W. Kline, J. A. Davis, Aaron G. Miller and E. L. Kiesel have been elected to the medical staff of the German Hospital.——The Department of Charities and Corrections has appointed the following outdoor physicians: Drs. Daniel A. Modell, W. E. Morgan, J. Winslow Longfellow and William H. Semple.——Dr. Sherborne W. Dougherty has been appointed medical inspector in the Philadelphia postoffice, succeeding Dr. James B. Harmer.——Dr. Jonathan C. Biddle has been re-elected superintendent and chief surgeon of the State Hospital for Injured Persons, Fountain Springs.——Through a private letter it is learned that Dr. Keen, ex-president of the American Medical Association, and daughters, have reached Benares, on their way around the world. They started on the journey traveling westward, after attending the Association meeting at St. Paul last June. While in Burmah Dr. Keen had the misfortune to suffer a fracture of the clavicle, from which he had nearly recovered on last reports.——Dr. George E. de Schweinitz, professor of ophthalmology in Jefferson Medical College, has recently been elected to the chair of ophthalmology in the University of Pennsylvania, made vacant by the death of Professor Norris a few months ago. It is reported that Dr. de Schweinitz will accept the new position. He will thereby return to his alma mater.

GENERAL.

The Woman's Medical Journal.—This journal enters on its twelfth volume with the January number in an entirely new form and general "get up." It bears every evidence of prosperity and of the fact that it is well managed both from the business and editorial side.

Liberal Prizes by a Pharmaceutical Firm.—Cash awards are being offered by the Maltine Company, Brooklyn, N. Y., for the two best essays on preventive medicine. The liberality of the prizes, $1000 for the first and $500 for the second, will, no doubt, bring meritorious articles into the competition. While the firm does not so state, it is assumed that the essays will be published and presented to the profession, thus doing good generally. The three judges are well-known and reputable physicians. One of the restrictions governing the competition is that no mention of the preparation in which the house is interested be made, either directly or indirectly.

CANADA.

Personals.—Dr. A. D. McIntyre has been appointed house surgeon at the Kingston General Hospital to succeed Dr. Grimshaw, who has gone to England for a post-graduate course.—— Dr. J. R. Lancaster, who has been practicing at Tilsonburg, Ont., for the past seven years, has been appointed house surgeon at Grace Hospital, Toronto.

Dr. J. A. Fife, one of the oldest practitioners of Peterboro, Ont., died there on the morning of February 12. Dr. Fife was born in the County of Peterboro in 1838 and received his medical education at the Toronto School of Medicine and his degree from Victoria University, Toronto. Subsequently he took a post-graduate course at Bellevue. During the American Civil war he served for two years in the Northern navy as surgeon.

Toronto University's New Medical Building.—Dr. R. A. Reeve, Dean of the Medical Faculty of Toronto University, headed a deputation to the Ontario Government during the past week with a view to obtaining a grant of $50,000 toward the proposed new physiologic building which it is proposed to erect in the Queen's Park along with the other university buildings. The estimated cost of the new building is $125,000 and it is proposed that the Arts Department carry one-third of the expense, hence the appeal to the government.

The Efficacy of Vaccination.—According to Dr. J. E. Laberge, of the Contagious Diseases Hospital, Montreal, the efficacy of vaccination as a preventive of smallpox has been abundantly proven within the last year in that city. Since May last there have been in the City of Montreal Contagious Diseases Hospital 240 cases of smallpox, and in no instance had a single patient been vaccinated. In addition to these there was a staff of eighteen persons, physicians and nurses, who for these months have been in daily and hourly contact with these smallpox patients, but not one of them has ever contracted the disease. The order issued to municipalities throughout the province of Quebec has been fairly well obeyed, and three hundred and forty-seven municipalities have so far adopted the prescribed by-law with regard to general vaccination with its accompanying fines for non-fulfillment of same.

Insanity Increasing in Ontario.—The Inspector of Insane Asylums in Ontario has reported to the government that on September 30 last there were resident in the asylums of the province no less than 4604 patients. In 1890 the number was 3318. The respective population of the various asylums of the province is as follows: Toronto, 724; London, 1034; Kingston, 509; Hamilton, 1029; Mimico, 605; Brockville, 613. In comparing the relative increase of insanity with the increase in population since 1861 the report states that in that year there were in the province 1631 lunatics in government institutions and that the total population was 1,396,091, while in 1901 there were insane and idiots to the amount of 5880 when the population was 2,182,942. The population has increased in forty years at the rate of 56 per cent., while the insane and idiotic officially known have increased at the rate of 260 per cent. The ratio of insane to population in 1861 was as one to 856; in 1901, as one to 371.

Capsular Nephrotomy at the Toronto Clinical Society.—The Toronto Clinical Society held its regular meeting on the evening of February 5. A case of capsular nephrotomy was reported by Dr. W. P. Caven and Dr. George A. Peters; a second by Dr. Primrose, who had operated on his own case. Dr. Caven gave a detailed history of his case: A. W., a male, aged 34 years, who had suffered from migraine since childhood. In the summer of 1899 he was first told that he had Bright's disease. His kidneys were considered to be sound in 1892 when he had been passed for life insurance. In 1896 he had a great deal of worry, and traces the commencement of his ill-health from that time. When he came under the observation of Dr Caven a diagnosis of Bright's disease was made. The quantity of urine passed in the twenty-four hours was from 60 to 80 ounces and there was three to seven grams of albumin to the liter present. In addition to the albumin, there were hyaline, granular and fatty casts present in great abundance; urea from 1.5 to 2 per cent. On January 3, this year, he was placed under chloroform, and Dr. Peters performed encapsulation of both kidneys at the same sitting. Prior to the operation there had been a gradually increasing number of casts in the urine, but Dr. Caven stated there was none now found in the twenty-four hours. A record was shown from which it could be seen that there was no material change in the albumin, or in the quantity of urine passed or in the urea. The man was very ill for some days after the operation, but his general health lately is commencing to improve. Dr. Peters stated there was a small abscess on the neck of the patient which seemed to him might have some bearing on the case. He thought that Dr. Edebohls was preceded by Mr. Harrison, who had used this operation in cases of acute disease. Dr. Peters did not deliver the kidney through the wound as advised by Dr. Edebohls. Dr. Primrose's case occurred in a boy of 10 years of age, and the operation was performed before Edebohl's paper on the subject was published. For six months prior to the operation the boy had had general anasarca and ascites, the general edema over the body being particularly well marked on the face and extremities. Paracentesis abdominis had been performed seventeen times. Albumin was present in the urine to the extent of 1.6 per cent. On November 20 he cut down upon the right kidney in the line following Harrison's incision and drained for a fortnight. After the operation the urine gradually increased from 20 to 40 ounces and the albumin diminished to .03 per cent. On December 20 he cut down upon the left kidney and removed the kidney capsule entirely. Here he followed Edebohls' suggestion and brought the kidney out of the wound. The child was critically ill for some days, but gradually recovered, and the renal symptoms underwent remarkable recrudescence.

FOREIGN.

American Hospital in Paris.—Funds have been raised, it is said, sufficient for the purchase of land, and the erection of an American hospital in Paris.

Gruber in London.—The Royal Inst. of Public Health invited Prof. Max Gruber, Vienna, to deliver the Harben lectures in January. His theme was "Bacteriolysis and Hemolysis."

Fifth International Congress of Psychology.—Professor A. Tamburini, of the Instituto Psichiatrico at Reggio nell' Emilia, is the secretary general of this congress, which is to be held at Rome in 1904.

Title for von Bergmann.—Kaiser Wilhelm has conferred the title of "Wirklicher Geheimer Rath" on Prof. E. von Bergmann, of Berlin. It entitles him to be called His Excellency, and is considered a great honor. It has been conferred on only two physicians before, von Langenbeck and von Esmarch.

German Congress of Internal Medicine.—Professor Naunyn, of Strassburg, will preside over this congress, which will convene at Wiesbaden, April 15 to 18. The main addresses will be on "Diagnosis and Treatment of Gastric Ulcer," by Ewald and Fleiner, and on "Radiotherapy," by Bie, of Copenhagen.

The Ollier Monument.—A Paris exchange states that the amount subscribed for the purpose of erecting a monument to the French surgeon, Ollier, of Lyons, has already reached more than 50,000 francs. The surgeons of this country, through Professor Keen, have subscribed 3217 francs, of Austria 600 francs, and of Germany 6000 francs.

Deaths Abroad.—Dr. Ballay, governor-general of French West Africa.——Dr. Spirido Mavrogeny Pasha, chief physician to the Sultan, died January 22, aged 83. He studied and graduated at Vienna. He was general inspector of military hospitals and held the rank of general. Dr. Mavrogeny was a linguist, and edited a medical journal in Turkish and French.

International Conference of the Medical Press.—The Prince of Monaco is to preside over this conference, which is to met at Monaco, April 7, 8 and 9. The Société Médicale de Monaco is planning a splendid reception and lavish hospitality. Among the measures to be discussed are the constitution of the international committee and the protection of literary property.

LONDON LETTER.

The Smallpox Epidemic.

The number of patients in hospital, which has been 754, 873, and 877 in the three preceding weeks, has declined to 870; 203 new cases were admitted during the week against 261, 306, and 213 in the three preceding weeks. The deaths were 28, 45 and 55 in the preceding three weeks, but fell last week to 34. The epidemic has cost a very large sum; up to the present it has entailed a special expenditure in providing new hospitals of £2,000,000.

The Census of London.

The official report on the census taken last year, so far as it refers to London, has just been issued. The area comprised covers 74,832 acres, and has a population of 4,536,541. In 1801 the population was 959,310; it has therefore increased five-fold during the century. Since 1881 a decline in the rate of increase has been in progress, the lowest rate (7.3 per cent.) being in the decade just concluded. That this rate still continues to decrease is shown by the fact that the increase from 1891 to 1896 was only 4.8 per cent., from 1896 to 1901 2.4 per cent. During the last 10 years the population has increased by 308,224, but as the natural excess of births over deaths in that period was 491,000, the loss by migration exceeded 180,000. This migration is one of the causes of the rapid increase of suburban districts. In what is known as greater London the population increased in 10 years by 947,000. In the central parts of London the population has declined during the last 40 years in consequence of the transformation of dwelling houses into warehouses, offices and places of business.

Treatment of Paralysis of the Upper Root of the Brachial Plexus by Muscular Transplantation.

At the Clinical Society Mr. Tubby and Dr. J. Purnes Stewart showed a case illustrating a new method of treating old-standing paralysis of the upper root of the brachial plexus. A man, aged 57, fell on his shoulder and head two years ago. He was unconscious for an hour afterward, and on recovery was unable to use his left arm. After treatment at various hospitals without benefit he was admitted to Westminster Hospital. There were marked paralysis and atrophy about the left shoulder and upper arm, and total loss of electrical excitability in the deltoid, infraspinatus, biceps, brachialis anticus and supinator longus on the left side, and consequent inability to adduct the arm or flex the elbow. There was also some anesthesia along the outer side of the upper arm and forearm, which subsequently disappeared. These symptoms pointed to paralysis of the upper roots of the brachial plexus of the Erb-Duchenne type. Twenty months after the accident Mr. Tubby transferred part of the triceps and fixed it into the biceps with the object of restoring the power of flexion at the elbow and a month later attempted to restore power to the deltoid. Since the operation the transplanted portions of muscle have been assiduously massaged and the faradic current has been applied. There has been great improvement in the movements and in the utility of the limb. The patient can flex the elbow fairly and during flexion the transplanted part of the triceps can be felt in front of the elbow and both galvanic and faradic excitability have returned. He has not yet recovered the power of abducting the arm, but the transplanted part of the pectoralis major can also be felt to harden. At first there was a total loss of excitability both to induction shocks and to the galvanic current. Three months after operation the galvanic excitability returned and six months after faradic reaction could be demonstrated.

Improvement in the Health of London.

According to the returns just issued, the mean mortality of London during the decennium which has been completed was below that of 1881-90 at all periods of life. Mr. Shirley Murphy, medical officer of the London County Council, gives a table showing the mean annual number of deaths in 1891-1900 as compared with the annual number that would have occurred had the death-rates of the previous decennium been maintained. The number of lives gained and the number of lives lost at the several ages in the later period are also shown. This gain or loss is expressed in terms of "life capital," the figures being obtained by applying the "mean future life time" values, as ascertained from a London life table, to the number of lives gained or lost at each age-group. According to this calculation in the 10 years, 1891-1900, as compared with the previous decennium, there accrued a saving of 3664 lives per annum, representing an annual salvage of 118,483 of life capital. This reduction in mortality has by no means been manifested in the death-rate from all causes alike. Thus, there has been in the later decennium, as compared with the earlier, a marked increase in the death-rate from diphtheria, cancer and influenza and a slight increase in the death-rate from a few other causes. On the other hand, there has been marked reduction in the mortality from phthisis and also from non-tuberculous respiratory diseases, and diseases of the nervous system, as well as a less strongly marked decrease in the death-rate from several other causes. The most important change for the worse is in the death-rate from cancer, which has increased during the last decennium by little less than 27 per cent. In the decennium ending with the year 1900 London experienced the lowest infantile mortality of any of the principal English towns save one, viz., Bristol. During 1900 the eastern metropolitan districts showed the highest infantile mortality, 175 per 1000 births; the northern group, the lowest, 145 per 1000, while the southern, the central, and the western groups experienced a rate of 158 per 1000.

Improved Record of Vital Statistics.

With the new year the method of furnishing the usual weekly returns of births and deaths has been greatly improved. The area covered is much enlarged; 74 cities and boroughs being included in place of the previous 32. Particulars of mortality are now published weekly respecting nearly one-half of the population of England and Wales. The tabular matter has been re-arranged so as to present the more salient facts in a manner as convenient as possible for reference. The classification of diseases and the list of causes of death have been improved. Several of the less important diseases are omitted and other and more definite diseases added. Certain of the terms retained (presumably because they are still in use by some medical men) are printed in italics, to show that they are either the names of symptoms merely or are otherwise objectionable. Some of the principal groups of disease have been subdivided so as to give opportunity for the more accurate classification of causes of death, hitherto sometimes ambiguously returned. Thus deaths from tuberculous phthisis are generally certified as from phthisis or consumption simply, which term includes, according to the authorized nomenclature, other diseases besides pulmonary tuberculosis. The more precise term is therefore inserted in addition to the term more commonly, but less correctly employed. So also, as an alternative for the old-fashioned but misleading tabes mesenterica, tuberculous peritonitis is suggested. In the past tabes mesenterica has been held by some to include not only tuberculous mesenteric disease, but likewise atrophy, marasmus, and certain other ailments attended by wasting which are not necessarily tuberculous. The malignant group of diseases also has been subdivided so as to distinguish the carcinomata from the sarcomata, and both of these from the numerous tribe of diseases indefinitely returned as malignant.

Correspondence.

Is Membership in County Society Necessary for Old Members of State and National Societies?

DENVER, COLO., Feb. 14, 1902.

To the Editor:—In considering the proposition for change of the by-laws of the various state societies to conform with the new requirements of the Association, might it not be well to bear in mind the legal status of those persons who already have membership in some state societies and who have not maintained their membership in county societies. It has been suggested that any proposal to forfeit the membership of such persons in either the state organizations or the American Medical Association could not be enforced lawfully, so long as these persons continue to comply with the letter of the regulations that were in effect at the time they acquired membership. I do not, of course, presume to pass upon the question so raised, but simply call attention to the fact that it has been brought forward in the discussion of the subject and that it is most likely to be tested judicially by some of the affected members in some part of the country.

It will be at once admitted that the majority of the Association members have no intention of adopting a standard which will work a hardship upon any old members who, for whatever reason, may not desire to re-enter their local or county society, while at the same time they do not wish to forfeit their existing and legally acquired membership in either the

state society or the Association. The number of members actually affected in this manner will be very small compared with the total membership of the Association. If it can be arranged that they shall continue in good standing and that the new requirements will apply only to persons who do not already hold permanent membership in the Association or in a state society, it will make the adoption of the new requirements more certain in some state societies and prevent a feeling of grievance on the part of some old and highly honored members. Such feeling of grievance, we can not but admit, would have a very substantial basis.

May it not then be wise to add to the clause affecting membership acquired through membership in the county societies a "saving clause," to this effect: "Provided, that the operation of this condition of membership shall apply only to new members and shall in no instance be so construed as to forfeit an existing, legally acquired membership in the Association." It will thus be made perfectly evident that it is the intention of the Reorganization Committee to thoroughly and effectually safeguard the privileges of all. Very respectfully.

WILLIAM P. MUNN, M.D.

A Physician's Directory.

LAWRENCE, MASS., Feb. 3, 1902.

To the Editor:—I am of the opinion that a step in the right direction may be taken by establishing a system of registration followed by the publication of a "Physician's Directory" by the American Medical Association. The great danger to the medical profession is not from the quack or the promoter of a fad, but from him who has obtained a medical degree, secured a state license, perhaps has been admitted to the state society, and has been unable morally to keep up with the respectable members of the profession. Such an individual sooner or later is found out and can be easily cared for. The great majority of immoral and ignorant of those who have received medical degrees and state license do not seek admission to societies because they fear the required examination and the discussion of medical topics by regular physicians. This class, I believe, constitutes a majority of cheap contract physicians. They lower the standard and prostitute the title of Doctor of Medicine. The "quack" is recognized and classified by the people. The harm comes from him who has some right to the title of doctor other than a clear and moral right. Registration and an honest directory would do much to lessen the evil.

This would be a preliminary toward the establishment of a National Board of Health, which could in time demand a place in the cabinet for its representative. If that could be consummated a standard could be set and maintained and the question of reciprocity solved. Furthermore, an American Medical Education Society might be formed to enlighten the American Humane Education Society on some topics, and when they understand each other they could do much for humanity, because the Humane Society is an aggressive, active organization, and does much good within certain circumscribed limits. If a Medical Society had half its spirit and pugnacity it would soon make the title of Doctor of Medicine respected, and not, as it is now, a hollow mockery. Very truly yours,

JOHN T. CAHILL.

Inhalation and Atomization.

CHICAGO, Feb. 17, 1902.

To the Editor:—On page 474 of THE JOURNAL of February 15, it is stated that "It is yet a question as to how much of the respiratory tract is reached by inhalations." I am surprised that the writer of the above is ignorant of the experimental work that I have done in this line. It is now positively proven that nebulized medicaments reach the pulmonary alveoli of the human lung, of the lung of dogs and of guinea-pigs. The microscopic slides which are the proof of this contention and statement are in my possession, and unquestionably prove the truth of this assertion. As far back as May 28, 1898, THE JOURNAL published an article by me on "Experimental Work on the Penetrability of Vaporized Medicaments into the Air Passages." This proved the existence of nebulized medicaments in the lung of a human being. Since then much experimental work has been done that demonstrated the presence of nebulized medicaments in the pulmonary alveoli of dogs and guinea-pigs.

On April 12, 1897, I presented the subject before the Chicago Pathological Society, and in 1900 before the Chicago Academy of Medicine, and at both times exhibited microscopic slides to demonstrate the truth of the assertion.

In view of the foregoing, I claim that it is definitely proven that nebulized medicaments properly subdivided and administered do reach the pulmonary alveoli. I am quite aware that this statement is at variance with those found in the older books upon this subject, but such former statements can not stand as true in the light of the microscopic demonstration of the fact that they do reach the pulmonary alveoli.

HOMER M. THOMAS, M.D.

The Proper Method of Vaccination.

SCHAEFFERSTOWN, PA., Feb. 14, 1902.

To the Editor:—To a great many physicians a sore arm after vaccination signifies immunity, regardless of the nature of the soreness. A proper vaccination is attended with slight, or no, local or constitutional disturbances. The extreme local and constitutional disturbances, such as erysipelas, hospital gangrene, abscess, phlegmon, septicemia, pyemia, and tetanus, are due to an abrasion of the surface, admitting the entrance of the different bacteria. In my opinion the proper way to vaccinate is by means of a spring lancet, which leaves no open wound for the introduction of germs. It requires very little lymph to produce a proper vaccinia, one capillary tube being sufficient to produce half a dozen. The puncture made by the lancet is barely discernible, and leaves no abraded surface for any sort of exterior infection.

During the epidemic of 1874-75, I vaccinated, by means of the lancet, over eight hundred people of all ages—primary and secondary—and not one manifested any serious local or constitutional trouble. During the present epidemic this method has given the same satisfactory results, while those who employed the scalpel, or the needle, with the same environment and using the same lymph, have had many complications. Hence it is again to be inferred that the faulty method of operation and not the lymph employed is responsible for the sufferings and deaths due to vaccination. I wish to emphasize the erroneous technique of an abrasion by scraping, or almost cutting, of the arm; producing a good culture-medium for germs not intended. With the spring lancet, no untoward effects will ensue.

J. W. KEATH, M.D.

Married.

JOSEPH E. HAILE, M.D., to Miss Mae Hayes, both of Kershaw, S. C., January 29.

WILLIAM F. C. HEISE, M.D., to Miss Adella von Rohr, both of Winona, Minn., February 5.

C. K. CARRUTHERS, JR., M.D., to Miss Ethelene Rowell, both of Pine Bluff, Ark., February 9.

J. RAY ALLEN, M.D., Orwell, N. Y., to Miss Ethel J. Barney, at Sandy Creek, N. Y., January 30.

SAMUEL B. POTTER, M.D., to Mrs. Sarah E. Peoples, both of Frederichtown, Ohio, January 30.

JAMES P. TUCKER, M.D., Galveston, Texas, to Miss Thelma Cooper, at Waco, Texas, January 29.

NICHOLAS C. PARRISH, M.D., Denison, Texas, to Miss Emma Ryle, at Pilot Point, Texas, January 28.

WILLIAM T. DOWDALL, M.D., Cosner, Ill., to Miss Anna Connole, of Carrollton, at Jacksonville, February 8.

ROY S. BARNSBACK, M.D., Edwardsville, Ill., to Miss Minnie E. Whitbread, at Edwardsville, Ill., February 1.

ALFRED S. JAEGER, M.D., Indianapolis, Ind., to Miss Blanche C. Keiffer, of Bronson, Mich., at Indianapolis, February 5.

Deaths and Obituaries.

Martin L. Herr, M.D. University of Nashville, Tenn., 1866, chief surgeon of the Lancaster, Pa., General Hospital, one of the organizers of the Lancaster Pathological Society, member of the City, County and State Medical societies and of the American Medical Association, died of paralysis at Lancaster, Pa., February 8, aged 63. He had been on two occasions delegate to the International Medical Congress. Dr. Herr was prominent in business as well, having been director and president of a Lancaster bank, a street railway company and manufacturing companies.

William Murray Weidman, M.D. University of Pennsylvania, 1860, an eminent physician of Reading, Pa., died from heart trouble, February 8, aged 66. He served through the Civil war and was formerly president of the Pennsylvania Medical Society, of the Berks County Medical Society and the Reading Medical Association. Dr. Weidman was upon the staff of the State Asylum for Chronic Insane, of St. Luke's Hospital, and Reading Hospital, and was a member of the American Medical Association and the American Academy of Medicine.

Benjamin Franklin Pope, M.D. Albany (N. Y.) Medical College, 1864, lieutenant-colonel and deputy surgeon-general, U. S. Army, chief surgeon of the Division of the Philippines, died at Manila, February 14, after an illness of two weeks, from Bright's disease. He served as assistant surgeon in the Civil war, and at its close entered the regular establishment.

Abijah T. Hudson, M.D. Albany (N. Y.) Medical College, 1847, Stockton, Cal., member of the San Joaquin Medical Society, former physician in charge of the San Joaquin Hospital, surgeon of the 26th Iowa Infantry during the Civil war and one of the oldest practitioners in California, died of general debility, February 5, aged 83.

Ira W. Baldwin, M.D. Ohio Medical College, Cincinnati, died of apoplexy at his home in Xenia, Ohio, February 1, aged 63. He had practiced also in Spring Valley and Yellow Springs, Ohio, and in Iowa. The members of the Greene County Medical Society attended the funeral in a body.

Nathaniel Ostrander, M.D. Washington University, St. Louis, Mo., 1848, died at his home in Olympia, Wash., February 7, aged 83. He was one of the pioneers of the northwest, and had been mayor of Olympia and a member of the territorial legislature.

Washington D. Jeffries, M.D. Williamette University, Salem, Ore., 1887, who had practiced medicine for nearly fifty years in Salem, and had been a member of the legislature, died February 5, aged 63, after an illness of several years.

Jacob A. Baird, M.D. College of Physicians and Surgeons, Baltimore, Md., 1878, of Dunlo, Pa., while assisting two women from in front of a train, slipped in the snow and fell upon the rail, meeting instant death. He was 52 years of age.

Armistead Peter, M.D. National Medical College, Washington, D. C., 1861, died of heart disease on January 28 at his residence in Georgetown, D. C., aged 61. He was a member of the Medical Association of the District of Columbia.

Thomas N. Penrose, M.D. University of Pennsylvania, a retired medical director of the U. S. Navy, died at the U. S. Naval Hospital in Philadelphia, February 13, aged 67, from an involvement of heart and kidneys.

Adam Trau, M.D. University of Pennsylvania, 1861, a practitioner of Philadelphia, died, February 7, of paralysis, aged 61. He was for many years president of the German Hospital medical board.

Joseph G. Skaro, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882, of Minneapolis, Minn., died at a private hospital in South Minneapolis, February 9, aged 43, after a long illness.

Edwin W. Pyle, M.D. University of Pennsylvania, 1873, assistant surgeon at the New York Eye and Ear Hospital, died of pneumonia, February 7, at his home in Jersey City, N. J., aged 52.

Emily A. Hill, M.D. University of Michigan, 1886, of Bowling Green, Ohio, member of the Wood County Medical Association, died, February 7, of heart disease.

John L. Million, M.D. Missouri Medical College, St. Louis, 1851, died, February 14, in Springfield, Ill., where he had practiced for forty years, from pneumonia, aged 75.

T. W. Taylor, M.D. Starling Medical College, Columbus, Ohio, 1849, died at his home in Fountain City, Ind., February 3, of an affection of the throat, aged 82.

Dabney Luckie, M.D. Birmingham Medical College, 1898, of Birmingham, Ala., died, February 6, at Plant City, Fla., where he had gone for his health.

Rupert D. Cogswell, M.D. Northwestern University Medical School, Chicago, 1860, died at his home in Rogers, Ark., of pneumonia, January 21, aged 66.

James L. Holbrook, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1888, died at his home in Higginsville, Mo., February 9, of pneumonia.

Thomas C. McCord, M.D. Medico-Chirurgical College of Philadelphia, 1898, died, February 8, at his home in Pittsburg, Pa., of heart disease, aged 30.

Edward H. Plank, M.D. Jefferson Medical College, Philadelphia, 1870, died from pneumonia, February 6, at his home in Christiana, Pa., aged 50.

Herbert E. Martin, M.D. Central Medical College, St. Joseph, Mo., 1886, died at St. Joseph, February 7, after an illness of two years.

John P. Stack, M.D. Washington University, St. Louis, Mo., 1891, died at his home in East St. Louis, Ill., February 10, of pneumonia, aged 32.

Newman W. Smith, M.D. Berkshire Medical College, Pittsfield, Mass., 1846, a retired physician of Sublette, Ill., died at Dixon, recently.

John B. Andrews, M.D. Dartmouth Medical College, Hanover, N. H., 1875, died of paralysis at Lynn, Mass., February 10, aged 61.

James Hine, M.D. New York University, 1847, died at New Milford, Conn., February 9, aged 79, from injuries received in a fall.

Sterling P. Bond, M.D. Arkansas University, Little Rock, Ark., 1886, died in Mangum, O. T., February 9, of pneumonia, aged 36.

George A. Hess, M.D. University of Pennsylvania, 1870, of Grand Rapids, Mich., died of paralysis, February 9, aged 58.

Samuel H. Rodman, M.D. New York Medical College, 1863, of Huntington, N. Y., died of apoplexy, February 10, aged 64.

Charles H. Kennedy, M.D. University of Michigan, 1869, died at his home in Sylvania, Ohio, February 7, aged 92.

Peter R. Cortelyou, M.D. Bellevue Hospital Medical College, New York, 1867, died at Marietta, Ga., February 6.

William H. C. Smith, M.D. University of Pennsylvania, 1866, died at his home in Millville, N. J., February 12.

Richard S. Vest, M.D. Medical College of Virginia, died at his home near Ashland, Va., February 2, aged 76.

Henry T. Dalgleish, M.D. Ohio Medical College, Cincinnati, died, February 2, at Vevay, Ind., aged 42.

James S. White, M.D. University of Michigan, 1866, died at Hodgdon, Me., January 29, of pneumonia.

Frederick F. Tucker, M.D. University of Texas, 1897, of San Angelo, Texas, died, February 6.

George W. Thomas, M.D., of Eatonton, Ga., died of Bright's disease, February 2, aged 64.

Miscellany.

Osteopathy.

The following is an abstract of the argument against the osteopath bill, made before the Judiciary Committee of the New York Legislature, by Dr. E. Eliot Harris, representing the New York State Medical Association:

The tendency of modern times is to raise, rather than to lower the standard of the educational qualifications of professional men. The public has so long suffered from poorly educated physicians that the legislatures of nearly every state in the Union have enacted laws raising the educational qualifications of the candidates to be examined for a license to practice medicine. We claim osteopathy, so-called, is an agent used in the treatment of disease, and as such has no more right or reason to be separated from the general practice of medicine than electricity, mechanical exercise, bathing, nursing, massage, or any other valuable agent or method used in the treatment of disease, and is not entitled to a special examining board. The eye, ear, nose, throat, electrotherapeutic and other

specialists do not ask exemption from the examination in the general science of medicine demanded by the Regents of the University of the State of New York, of all candidates who apply for a license to practice medicine or any branch of medicine, and they do not ask for a special examining board. If the so-called osteopaths desire to establish a special branch of medicine, then they, too, should possess at least that minimum of the knowledge of the general science of medicine demanded by the present law governing the granting of a license to practice medicine in this state; and they should not try to escape the preliminary and final examinations for a license to treat disease, by securing the enactment of the so-called osteopathic bill.

Every part of the human body is connected sympathetically with every other part; an affection of the eyes or stomach may be due to disease of the kidneys; persistent cough or pain in the knee may be due to disease in the pelvic region; eyestrain may produce pains in distant parts of the body, and so on, indefinitely. The protection of the public health demands that no one should be allowed to treat diseases in this state, unless he can make a diagnosis based on the study of the general science of medicine, as taught in the incorporated medical colleges of this state.

The medical laws of the State of New York were enacted to protect the people of the state from charlatans, quacks and pretenders of all sorts. The time spent in the study of medicine prepares the mind and molds the character along the lines of truth and science and away from commercialism in medicine. A reaction from commercialism in medicine was a factor in causing the legislature to enact the laws which prevent any person, not presenting the intellectual and moral qualifications required by the Board of Regents, from practicing medicine in this state. The public is protected by discouraging commercialism in medicine and is benefited by fostering the science of medicine.

To summarize: 1. Osteopathy, so-called, is an agent or method used in the treatment of disease, and should not be separated from the general practice of medicine.

2. Osteopathy should not be made a special branch of medicine, by an act of the legislature, but should come under the present state laws, which govern all the special branches as well as the general practice of medicine.

3. The legislature should protect the public by denying the endorsement of the state to any person, as being capable of treating the diseases of the human body, unless such person can make a diagnosis of the condition of the human body, to do which requires a full knowledge of the science of medicine, including the use of drugs and other valuable therapeutic agents.

4. If the so-called osteopathic bill becomes a law, all candidates who fail to pass the Regents' examinations to obtain a license to practice medicine in this state may in this state treat all diseases of the human body by holding a diploma from any regular osteopathic college in the United States, a privilege which a graduate from Harvard or Yale medical college, for instance, does not enjoy.

[After the hearing by the Judiciary Committee the bill was quashed by a vote of 7 to 2.]

Societies.

Jacksonville (Ill.) Medical Club.—The new officers of this Club, elected January 27, are Dr. Albyn L. Adams, president; Dr. George E. Baxter, vice-president; Dr. David W. Reid, secretary; Dr. E. F. Baker, treasurer.

Giles County (Tenn.) Medical Society.—At the January meeting this Society elected the following officers: Dr. John S. Harris, president; Dr. John E. Baugh, vice-president; Dr. P. M. Anderson, secretary and treasurer.

Garrard County (Ky.) Medical Society.—At Lancaster, January 24, this Society elected these officers: Dr. Henry C. Herring, president; Dr. Elijah Evans, vice-president; Dr. Hugh M. Grant, secretary and treasurer.

Portsmouth (N. H.) Medical Society.—At the annual meeting, February 4, the following officers were chosen: President, Dr. Benjamin Cheever; secretary, Dr. C. W. Hannaford; treasurer, Dr. Andrew B. Sherbourne.

Leavenworth County (Kan.) Medical Society.—This Society, on January 23, elected Dr. John S. Wever, president; Dr. Simon B. Langworthy, vice-president; Dr. Mayer Shoyer, secretary; Dr. Charles R. Carpenter, treasurer.

Otsego County (N. Y.) Medical Association.—This is a new organization, formed January 18, at Oneonta by members of the State Association. These officers were elected: President, Dr. Julian C. Smith; vice-president, Dr. S. G. Pomeroy; secretary, Dr. Arthur H. Brownell; treasurer, Dr. Frank L. Winsor.

Douglas County (Kan.) Medical Society.—On January 21 this Society made preliminary plans for entertaining the State Medical Association in May. Dr. Samuel W. Williston was elected president; Dr. Elizabeth B. Laslett, vice-president; Dr. George W. Jones, secretary; Dr. Alfred Gifford, treasurer.

Newport (R. I.) Medical Society.—This Society's annual meeting, January 16, resulted in the election of the following: President, Dr. Christopher F. Barker; vice-president, Dr. William S. Sherman; secretary, Dr. Mary E. Baldwin; treasurer, Dr. Douglas P. A. Jacoby; librarian, Dr. Harry J. Knapp; curator, Dr. F. Jerome Davis.

Kalamazoo (Mich.) Academy of Medicine.—The annual meeting of this body was held at Kalamazoo, January 21, ending in a banquet in the evening. The election of officers resulted as follows: President, Dr. Charles H. McKain, Vicksburg; vice-presidents, Dr. Orton H. Clark, Kalamazoo, and Dr. Orrin F. Burroughs, Plainwell; secretary, Dr. Herman Ostrander; librarian, Dr. Edwin H. Van Deusen; treasurer, Dr. Orlo B. Ranney.

Los Angeles County Medical Association.—At the meeting of this Association, on February 7, at Los Angeles, the subject of Federation of Medical Societies was considered, a large number of members being present. All appeared in favor of a closer affiliation with the State and National Societies, and a committee was appointed to take up the matter and to confer with the Committee on Revision of the Constitution of the Medical Society of the State of California relative to a closer affiliation. The committee consists of Drs. W. L. Wills, G. L. Cole, W. W. Hitchcock,, F. T. Bicknell, E. R. Smith, William Dodge, and C. G. Stivers, secretary.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held Dec. 16, 1901.

President, Dr. N. P. Dandridge, in the Chair.

Spinal Cocainization.

DR. C. A. L. REED read a paper on this subject. His experience embraces thirty cases, including abdominal sections, curettage, reparative operations on the cervix and perineum, hemorrhoids, cystoscopic examination, and one case for the purpose of controlling irritability of the bladder.

In speaking of technique Dr. Reed emphasized the necessity of using a sterile solution and carefully locating the site for puncture. A line drawn from one crest of the ilium to the other serves as a guide with which to locate the space between the third and fourth lumbar vertebræ. The needle is inserted a little to the left and below the spine and should be directed forward and slightly inward and upward. A slight resistance is encountered when the needle touches the ligaments of the vertebræ, but this disappears when the arachnoid cavity is entered. As soon as this space is reached a few drops of clear fluid will escape through the needle. The syringe is then attached to the needle and the fluid thrown gently into the cavity. Unfortunately the puncture is not always accomplished with the facility implied by this description. Unless a local anesthetic be first applied, the pain attending the puncture may cause involuntary muscular contractions, making access to the intervertebral canal more difficult. In fat subjects the intervertebral canal is remote, and is only found after some difficulty. In a few cases the needle, after entering the intervertebral space, seems to pass to one side of the arachnoid. It has thus happened that Dr. Reed has had three "dry taps," no arachnoid fluid escaping. In one of the cases the fluid containing one-fifth grain of cocain was discharged to one side, no analgesia resulting; in a few minutes, however, alarming constitutional effects were manifest: the pulse went to 160, the respirations became exceedingly rapid, cyanosis was pronounced, prostration was extreme, while the patient's anxiety amounted to panic. In a few instances he has found that the complete consciousness that attends the anesthesia leaves the patient open to the depressing influence of the surroundings, the instruments and the operative procedures.

The complications of surgical analgesia induced by spinal injection are not more serious, while they are less constant, than those that attend the administration of chloroform or ether. Vomiting probably occurs in less than 10 per cent. of all cases, a decided improvement over the records of chloroform or ether. Syncope and headache have been observed. Spinal cocainization was offered to the profession exclusively as a surgical expedient. Our experience with it thus far has, with two exceptions, been limited to the body below the diaphragm, and usually to cases in which chloroform and ether were contraindicated, but the present trend indicates that it may be made the method of choice in preference to any general anesthetic and that the zone of its influence may be extended.

In childbirth, its use gives analgesia without diminishing the normal rhythm or force of the uterine contraction, while involution is assisted after delivery.

It is not to be supposed that the possibilities of so powerful an expedient as spinal cocainization should be limited to analgesia induced for either surgical or obstetric purposes. M. Brocard has called attention to the fact that cocain thus administered becomes an eligible remedy in sciatica, lumbago, zona, intercostal neuralgias, and in certain cases of irritable bladder. Dr. Reed's personal experience in two cases of the latter character has been very satisfactory. In one, that of a woman of 36, who was afflicted with frequent and painful urination, but in whom the cystoscope failed to reveal any local lesion, cure was effected by three spinal cocainizations.

The effort has been made to find some other agent that will produce the desired analgesia with similar effectiveness. Experiments have been made with antipyrin, tropococain and eucain, but all of them have been reported upon adversely by Bier. Jedlicks, however, reports a series of 93 cases, embracing abdominal sections, operations upon the lower extremities, perineum and scrotum, all of them done satisfactorily under eucain. Mixed injections have been given with but little advantage. In two instances he has given a quarter of a grain of morphia with the cocain, with the result of prolonging the analgesia, without producing any unpleasant effects attributable to the cocain.

The time has not yet arrived when the debit and credit sides of the account can be computed. It is to be hoped, however, that the near future will witness a systematic investigation of the results, immediate and remote, of this operation, upon which an authoritative utterance relative to its dangers or safety can be based. At the present day the statistical reports are essentially chaotic. Of the six alleged fatalities there are none that can not be explained upon a theory other than that of cocainization. The time has arrived when the complete statistics should be compiled; but in the meantime we are left with the comfortable realization that in spinal cocainization there has been added to our resources a safe means by which to induce anesthesia within certain limitations, and that its possibilities for the future are among the valuable though undetermined resources of the profession. We can accept for the present: 1, that spinal cocainization is practicable; 2, that it is relatively safe both as to immediate and future results; 3, that it is eligible in cases that can not take the general anesthetics with safety; 4, that its determined zone of influence is from the diaphragm downward; 5, that individual observations point to the possibility of general analgesia by spinal cocainization; 6, that it seems to be a safe expedient in parturition; 7, that it gives promise of a broader therapeutic applicability.

In the discussion, Dr. H. J. Whitacre dwelt upon the position of the patient. He places the patient in a perfectly erect position, an assistant holds a strand of silk across the back upon the crest of each ilium. That strand of silk goes immediately over the spine of the third lumbar vertebra. The finger is held on the apex of this spine and the patient bends forward, thus increasing the space between the laminæ to give the necessary room for the insertion of the needle. Another point in the technique of importance is that of first making a minute incision with a knife. The needle which we use for the introduction of cocain may be compared to a Mixter punch. When pushing the needle in, it is perfectly possible that we may take out a little fragment of skin and carry it in as we go along until it reaches the spinal canal, where it may set up irritation. Dr. Whitacre held that boiling the solution to sterilize it destroys its properties. The headaches, which he thinks have been proven to be due to the increased tension, will be relieved by a second puncture after the operation has been completed, allowing a small amount of fluid to escape. The suggestion has been made that such operations as fissure of the anus, hemorrhoids, etc., be done with spinal anesthesia. Considering the possibilities of danger in spinal anesthesia, I think it unjustifiable to use this means when local anesthesia by the intradermic injection of cocain will answer the same purpose. It is possible to incise a fissure under a two per cent. solution of cocain; it is possible to dilate the sphincter, not completely, but certainly sufficiently to remove hemorrhoids and to dissect out fistulæ; indeed, many operations in which it would seem impossible to use this method can be performed successfully and much more safely than by spinal or general anesthesia. When these things can be done in this way it hardly seems justifiable to me to employ spinal anesthesia.

DR. FRANK W. LANGDON made some interesting observations on the order in which sensation returns to anesthetized parts.

DR. LOUIS STRICKLER said that in his experience sterilizing the cocain solution undoubtedly largely, if not entirely, destroyed its anesthesia properties. He called attention to the fact that eucain can be sterilized whereas cocain can not. His method with cocain is to sterilize the bottle and then boil the water, and on the latter cooling sufficiently to add the cocain crystals and allow them to dissolve, which is as near as he believes we can get to the sterilization of cocain.

DR. C. R. HOLMES took exception to the statement that cocain solutions become inert after sterilization. He has not used any cocain solution for twelve years that had not been sterilized by boiling, and has used it upon operations upon the eye, ear and nose thousands of times. In his experience it is the rarest thing to find that the drug is not efficacious, and in these rare cases he has regarded its lack of action to the individual idiosyncrasy of the patient. One must always bear in mind that there is a great difference in alkaloids, and my remarks have reference only to Merck's preparation, as I have used none other.

CHICAGO MEDICAL SOCIETY AND THE CHICAGO SOCIETY OF INTERNAL MEDICINE.

Joint Meeting, held Jan. 29, 1902.

Dr. E. T. Wells, in the Chair.

The Classification of Cirrhosis of the Liver.

DR. ARTHUR R. EDWARDS, after giving the classification of Rosenstein and that of Gilbert and Surmont, offered the following, with a view of including the principal conflicting clinical and pathological divisions.

I. Capsular cirrhosis. Also known as glissonian or lymphatic cirrhosis. (*a*) Chronic perihepatitis; isolated or part of a chronic peritonitis. (*b*) Portal vein syphilis (also vascular in origin).

II. Vascular cirrhosis. (*a*) Hepatic vein. 1. Stasis cirrhosis (cyanotic induration). 2. Cirrhosis, in (*b*) 1, or Laennec's cirrhosis; also Brieger and Sabourin, known as bivenous cirrhosis.

(*b*) Portal vein. 1. Laennec's cirrhosis or atrophic. First stage, pseudohypertrophy; second stage, atrophy. 2. Hypertrophic alcoholic cirrhosis, like Laennec's, only remaining large; fatty cirrhosis. 3. Cirrhosis from portal vein, syphilis, and from pyelothrombosis.

(*c*) Arteriosclerotic cirrhosis.

III. Biliary cirrhosis. (*a*) Obstruction—"Retentions icterus" and cirrhosis. (*b*) Biliary or hypertrophic, in French sense (Hanot's cirrhosis). 1. With icterus. 2. Without icterus.

IV. Mixed cirrhosis. Vascular (II) and Biliary (III) varieties combined.

DR. FRANK BILLINGS discussed "Clinical Manifestations of the Early Stage of Cirrhosis of the Liver."

Cirrhosis in Childhood.

DR. FRANK X. WALLS said that cirrhosis of the liver was one of the most uncommon diseases occurring in infancy or childhood. The cirrhoses belong to the decadent period of life and only under the most unusual conditions are they encountered during its ascendancy. Though morbid factors be evolved within the economy of the child, that in the adult lead to a gradual parenchymatous decay and interstitial overgrowth, still in the child the nutritive and reparative powers of the individual are sufficient to sustain and restore the hepatic parenchyma, even though seriously damaged. In children who die as a result of some overwhelming sequel of the acute infectious diseases the liver is frequently found to be the seat of an extensive cellular infiltration of the connective tissue, with a granular, fatty, or even necrotic degeneration of the epithelium, and so often was this seen that one might believe there was always more or less hepatic inflammation in the severer cases of infection. Klein examined the livers in eight consecutive autopsies on scarlet fever patients and discovered acute hepatitis in all. Moreover, sufficient evidence was found in the enlarged livers and subjaundiced skins of those who recovered, to indicate that the acute hepatitis was not confined to the lethal cases. Despite the frequency of this acute hepatitis, it was most unusual to meet with a case in which there was the slow productive overgrowth of subsidiary tissue at the expense of the granular elements which constituted the morbid picture of cirrhosis. Cirrhosis was an advanced lesion, slow and tardy in its evolution, and demanded time for its development. It was so rare a disease in the young that those who had had the largest clinical experience could count their cases in the units. Baginsky had seen four cases. Henoch had never seen a fully developed case. Charles West, among 70,000 sick children, saw cirrhosis but four times. Frerich saw but one.

Male children were afflicted more often than female in the proportion of five to one. In Palmer's group, the ages varied from one month to eighteen years, and fifty per cent. of these occurred between the ninth and fifteenth years. An alcoholic history had been obtained in less than twenty per cent. of the recorded cases. In a few of these the amount of alcohol taken daily for a considerable period of time had exceeded a pint of brandy, but in most of them only a small quantity of spirits had been drunk. While the influence of alcohol in the production of cirrhosis in children was decisive, it was not so consequential as in the adult. Syphilis was mentioned as an etiological factor in about ten per cent. of the cases, tuberculosis frequently, acute infectious diseases seemed only accidentally in the history, chronic sepsis occasionally, and Thompson had collected a number of instances of obliteration of the bile ducts in the new-born, which were followed by cirrhosis.

Dr. Walls then discussed at length the symptomatology, the diagnosis, prognosis, and treatment of cirrhosis of the liver in childhood. Treatment, he said, had thus far been fruitless. Could the advent of the cirrhosis be anticipated, one might hope for much by withdrawing all harmful factors and giving careful attention to the hygiene and diet. Much had been claimed, particularly by the French school, for an exclusive milk diet, even if the cirrhosis be established. The use of the so-called resorbent waters, such as Carlsbad, the inunctions of gray salve, and the rational fulfilment of the symptomatic indications grasped the present possibility.

Pericarditic Pseudocirrhosis of the Liver.

DR. JAMES B. HERRICK read a paper on this subject, which clinically presents relatively slight edema of the lower extremities, enlarged liver and rather obscure cardiac findings. Three cases described in 1896 by Pick showed postmortem an adhesive obliterating pericarditis; adhesive pleuritis and changes in the liver described as nutmeg liver, cirrhosis of the liver and coarsely granular liver. From his studies of these cases and other similar ones reported by other observers, he concluded that this symptom-complex resembling true cirrhosis was caused by a late pericarditis that induced circulatory disturbances in the liver, leading to an increase of connective tissue, in this way producing portal stasis and ascites.

Dr. Herrick referred to the importance, from a diagnostic standpoint, of inquiring into the past history for symptoms suggestive of preceding pleurisy for pericarditis; and of seeking the physical signs of active, or healed pleurisy. The coarser signs of pericardio-mediastinitis should be sought, such as the systolic retraction interspaces, the diastolic rebound, the paradoxical pulse, the fulness of the veins in the neck, and the feeble apex impulse.

Dr. Herrick agreed with Strumpell that the cases were not all of one pattern and thought that the trouble, perhaps, originating in the pericardium, might from this point involve the contiguous pleura and peritoneum; in other words, that passive congestion of the liver was not an ample explanation for all the phenomena of the disease. While Pick's observations had been preceded by somewhat similar observations of others, and while one might criticise somewhat his line of reasoning, yet full credit must be given to Pick for having most accurately described the symptom-complex, and for calling the attention of the profession to this peculiar condition.

Medical Treatment of Cirrhosis of the Liver.

DR. JOHN A. ROBISON said that cirrhosis of the liver was incurable if the fibroid stage had supervened. Prior to this stage there was a small chance for recovery, especially in the syphilitic cases.

The medical treatment should be considered, therefore, under three headings: Prophylaxis, the first stage of treatment, and the palliative treatment. The knowledge of a gouty ancestry, especially with a list of deaths from cirrhosis of the liver, should be of great value to the patient in conducting his habits of life in a channel where toxic products would not produce the cirrhosis. But unfortunately for the cirrhotic victims, their medical adviser's advice was seldom asked, and less often followed, until active signs of the disease were present.

If the use of alcoholics be the cause of the disease, it should be stopped. If malaria or syphilis, the proper active treatment should be established. If the cirrhosis was manifestly the result of disease of other organs, treatment should be specifically directed toward them.

No matter what the etiological factor, the general management of the patient, the supervision of his daily habits, exercise, diet, and the treatment of the various symptoms must receive constant attention. The diet should be plain and simple, free from alcoholics, strong condiments, or spices, relishes, sauces, fried food, pastry, and sweets. Vegetables and fruits might be allowed, and milk should be a main staple. The patient should receive plenty of rest and fresh air. An outdoor life is beneficial, especially at mineral spring resorts and in mild climates.

Vomiting should be allayed by bismuth and alkalies, with the addition of thymol, resorcin, creosote, etc., if fermentative dyspepsia is present. The only benefit from mercurials seems to be in their action on the intestinal tract. The routine treatment of ascites by hydragogue cathartics, diuretics, and other drugs was unsatisfactory, and paracentesis should be resorted to early. The union of the liver to the abdominal wall with omentopexy would relieve the portal circulation before the ascites was established. Paracentesis should be performed early, and often, if the fluid rapidly accumulated, as the pressure embarrassed respiration and the heart's action. Opium, absolute rest and the withholding of food from the stomach were essential in the treatment of hematemesis.

In case the diarrhea was intractable, large doses of the bismuth compounds were the safest remedies. In many cases it could not be checked, and it would be necessary to support the patient by administering the concentrated foods and alcoholics. Exhaustion should be combated by the use of tonics and restorative remedies.

DR. I. A. ABT presented a case of hypertrophic cirrhosis of the liver in a Russian boy, 13 years of age, whom he had had under observation for six years.

DR. HENRY B. FAVILL referred to mediastinal pericardial cirrhosis and narrated a case, twelve years of age. He said that the case presented by Dr. Abt and the paper by Dr. Walls would lead to the idea that these were all infections. If there was

anything more pronounced than another in connection with the subject of cirrhosis of the liver, it was the growing belief that it is infectious either primarily or is the result of infection, and whether the suggestion of Adami (as to the presence of latent and changed micro-organisms in the liver, which become weakened under toxic influences and stimulants) be accepted, or whether another view is taken of the infection, the general trend of opinion on the subject is that instead of having essentially a degenerative fibrosis, as an explanation of the cirrhotic process, we have a complex process in the fibrosis which bears some essential relation to the infective agent directly, causing it to be whipped into renewed activity by pre-existing toxic agents.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

PRESCRIPTION WRITING, XIV.

(Continued from page 474.)

Administration of Medicine per Os.

Medicines may be given by the mouth in the form of a capsule, powder, cachet or liquid. When capsules are given the amount of the combined ingredients should be observed so that the capsule will not be too large for the patient to swallow. If such be the case, the druggist may be instructed to make up double the number of capsules and direct the patient to take two at each dose. Capsules can be prescribed for certain patients who object to the taste of medicine, especially when it is given in sufficiently small doses. Creosote may be taken in capsules rather than in an unpalatable mixture. There are, however, instances where capsules have traversed the entire gastro-intestinal tract undissolved; under such circumstances a powder or liquid may be prescribed.

Powders are preferable to capsules when large doses are to be given and when the preparation is palatable. Sulphonal serves as an illustration, since it is given in two large doses for a capsule and acts more promptly when dissolved in hot water. There are certain drugs which should never be prescribed in powder form, because of their tendency to deliquescence. Salol and sodium salicylate belong to this class. Some combinations in the form of a powder, liquefy, as is demonstrated by combining chloral and camphor.

The liquid preparations can be prescribed suitably in the majority of cases if the practitioner observes care in selecting a proper vehicle. As previously mentioned, medicines which tend to irritate the stomach should, if possible, be taken immediately after eating, and well diluted in water. Arsenic when given in the form of Fowler's solution to children afflicted with chorea, should always be well diluted. The nurse should be instructed to put the required number of drops in at least half a glass or a glass of water, and if the child can not drink it all at one time, set the glass aside for a few minutes and then let him drink the remaining portion. In this way the stomach can be made to tolerate much larger doses than when given in too concentrated form. Iodids should likewise be well diluted before being introduced into the stomach if large doses are in the end desired.

In acute cases where changes in the condition of the patient may quickly arise, small amounts should be prescribed at a time; if capsules are given the physician should not write, as a rule, for more than fifteen, or two ounces if liquids, unless more than one teaspoonful is given at a dose. The patients feel that they are being imposed upon when they are required to purchase new medicine if one or two ounces of the previous prescription remains unused. On the other hand, in chronic cases it is preferable to prescribe much larger quantities at a time.

In administering certain medicines by the mouth it should be remembered that the mucous membranes of the stomach and intestine may not be in condition to carry on proper absorption. Literature records several cases where some opiate preparation has been introduced into the stomach to relieve severe localized pain or headache, and resulted in acute opium poisoning; this was not because the dose was too large but the gastro-intestinal tract was not in condition to absorb the first doses given; consequently by this delayed action, several doses were taken up at the same time with fatal result.

A word also must be said as to caution in prescribing for pregnant women. There are some drugs which produce untoward results upon a pregnant uterus by exciting abnormal contractions, and perhaps causing abortion. Ergot and quinin are especially included in this class; they act upon the unstriped muscle of that organ and set up a tendency to the expulsion of its contents.

There is danger in placing in a patient's hands a prescription for certain drugs, such as morphin, cocain, chloral, etc. If the physician finds it necessary to prescribe these drugs to susceptible individuals he should not neglect in some way to indicate to the druggist that they should not be refilled without his knowledge and consent. Otherwise he has not done his duty toward that patient. Another point is that such patients are prone to talk to their neighbors and advise them to try their medicines for relieving symptoms apparently similar to their own, while in fact the cause may be far different. A writer states one such instance where a female patient was given pills of hydrargyri protoiodidum to cure a headache of specific origin; the results were so miraculous and satisfactory that in a short time several of her lady friends were taking the same little yellow pills upon her recommendation. This bears out the old rule that what is food for one may be poison for another.

(To be continued.)

As an Inhalant in Bronchitis.

R.	Tinct. benzoini comp.	3ii	7|50
	Tinct. tolutani	3ii	7|50
	Spts. chloroformi	m. x	|66
	Spts. etheris	m. x	|66
	Spts. ammon. arom.	3i	3|75
	Alcoholis	3v	18|75

M. Sig.: Use in the inhaler three or four times daily.

Ichthyol in Trachoma.

Ichthyol, according to *Rev. de Thér.*, has been employed in the treatment of trachoma. It is used in the form of instillations as follows:

R.	Ichthyol	3ii	7|50
	Glycerini	℥ss	15
	Aquæ destil q. s. ad	3ii	60

M. Sig.: Drop into the eye once or twice daily, first anesthetizing the conjunctiva with cocain.

Under this treatment diffuse infiltrations of the conjunctiva in trachoma, of not very long duration, disappeared in a week's time; the follicles diminished in size and no new ones were formed. In chronic cases the purulent secretion was arrested with rapidity. It is also efficacious in corneal pannus.

Methylene Blue in Otitis Media.

According to H. Gaudier, in *La. Sem. Méd.*, the installation of a warm solution of methylene blue, 2 per cent. strength, into the auditory canal is of great service in the treatment of certain chronic forms of otitis media, especially in fetid otorrhea of children. He employs the following method: First thoroughly cleanse the canal with a warm soap and water injection, then instill 15 to 20 drops of the methylene solution into the ear. During this procedure the patient is directed to make forced expiratory movements while keeping the nose and mouth closed. In this way air is forced into the ear and the solution passes from the canal into the tympanic cavity. He states that the deodorizing properties of the methylene blue render it superior to other antiseptics. In using this prepara-

tion a pure medicinal article must be insisted on as some similar preparations contain arsenic and zinc.

Treatment of Acne Rosacea.

According to Dr. J. Nevins Hyde, a systemic treatment that will apply to any case can not be outlined. The treatment is that of the patient rather than of the disease. The use of wines, beers and liquors of all sorts should be interdicted. The diet should be simple in character; tea and coffee should be restricted, and all articles of food selected with special care. Proper attention should in all cases be given to the gastro-intestinal tract as dyspepsia and constipation are effective factors. Dr. Hyde states that most drugs are valueless aside from the local treatment. The local treatment of the first grade of acne rosacea should consist of stimulating lotions of green soap, formalin or sulphur in connection with ablutions of hot water. The following is recommended:

℞.	Sulphur. precip.	℥i	3|75
	Pulv. camphoræ	gr. v	|30
	Pulv. tragacanth.	gr. x	|66
	Aquæ calcis		|
	Aquæ rosæ, ãã	℥i 30	|

M. Ft. lotio. Sig.: Apply locally several times daily; or:

℞.	Sulphuris precip.	℥i	3|75
	Ung. aquæ rosæ	℥i	30|

M. Ft. unguentum. Sig.: Bathe the parts well in warm water and apply locally twice a day.

Medicolegal.

Number of Physicians Allowed on Boards of Health.—The Supreme Court of Louisiana says, in the case of State vs. Kohnke, that there is no sufficient reason for holding that the general assembly, in requiring, by Act. No. 192 of 1898, that three out of five members of municipal boards of health "shall, if practicable, be duly licensed and registered physicians," intended to prohibit the organization of any municipal boards with more than three physicians as members. The purpose seems, rather, it says, to be to require that a majority of the members shall be physicians, leaving the selection of the others to the discretion of the municipal councils, though, no doubt, this purpose is more plainly expressed in the provisions in the act relating to the parish boards.

Duty of Secretary of State Board of Health.—The case of McClatchy vs. Matthews was an application for a writ of mandamus to compel the secretary of the State Board of Health of California to permit the publishers of a local newspaper to inspect and take copies of the written reports of a bacteriologic examination of an alleged case of bubonic plague made for the State Board of Health. But from the answer filed it appeared that the secretary did not have the care, custody, or control of the reports in question when this proceeding was commenced; that they had prior to that date been transmitted to the governor, as a special report of the State Board of Health. In other words, the reports had been made to the State Board of Health, and by its direction transmitted to the governor. The secretary was only one member of the board, and, as its secretary, it was his duty, the Supreme Court of California says, to comply with all the lawful directions that it might make in the conduct of its business. Whether he opposed their transmission or consented thereto was immaterial. It could not be said that he committed any wrong in complying with the directions of the board; nor could it be said that it was unlawful, under the circumstances, for the board to transmit the reports to the governor. This point the court considers decisive of the case, and, in consequence, it reverses a judgment granting a peremptory writ of mandate as prayed.

Failure of City to Warn Employe as to Smallpox.—The case of Nicholson vs. City of Detroit was brought to recover for the death from smallpox of a carpenter who was in the employ of the city. At the time he contracted the disease he was at work upon a new hospital near an old one for contagious diseases—particularly smallpox; or was employed in tearing down the old building. Concerning the case, the Supreme Court of Michigan says that it was a cruel thing to permit him to enter the valley of the shadow of death unwarned, if those who sent him knew of the danger. A case involving a stronger appeal to the sympathy of a tribunal could hardly be imagined. But the court feels constrained to say that, if there was culpable negligence here, the remedy was limited to the persons to whose negligence the deplorable event was due, if there was a remedy. It was not a case where the doctrines of imputed negligence and that the principal must answer could be applied. The court says that it has been held that a city was not liable to a non-paying patient for injuries resulting from the neglect or misconduct of hospital officers or servants; or for the unskilful treatment of a resident physician; or for failure to take proper precautions to prevent the spread of the smallpox; or to notify the party suing, who was required to assist in the removal of the corpse of a person who had died of this disease, of the dangerous nature of the service required; or where a person caught the smallpox from a nurse who was permitted to leave the hospital without being properly disinfected; or for carrying a well person to the smallpox hospital, whereby he contracted the disease; or for negligence of a servant of the board of health in removing garbage. The true theory, the court holds, is that the township or city represents the state in taking measures for the preservation of the public health and building hospitals for contagious diseases, and, like the state, it enjoys immunity in case of injury to individuals, leaving liability for such injuries to rest upon the persons whose misconduct or negligence is the immediate cause of the damage. The township and city must always act through officers. If it provides a smallpox hospital, it must do it through persons selected for the purpose; and whether the law broadly directs that it shall do a thing, or shall select officers whose duties are prescribed by law, its obligation is the same. In imparting a portion of its powers, the state also imparts its own immunity.

The Law of Insanity.—The Supreme Court of Nebraska makes a kind of summary, in the case of Clarke vs. Irwin, of the law of insanity as applied by the courts of this country. An examination of the reported cases, it says, shows that the issue of insanity most frequently occurs in judicial proceedings as follows: First, in direct proceedings to procure the commitment of persons alleged to be insane; second, in suits affecting the validity of wills, where it is sought to show that the testator was not of disposing capacity; third, in criminal proceedings, where the defense pleaded is insanity and irresponsibility; fourth, in suits to avoid contracts because of insanity; and, fifth, in proceedings otherwise barred, where the plea is that he against whom the statute of limitations is pleaded comes within the enumerated exceptions because of insanity. The rule deducible from these cases is that for the purposes of judicial inquiry men are either sane or insane, and that such insanity is either total or partial. A total deprivation of sense, without lucid intervals, presents few legal difficulties. Such an unfortunate may be presumed never to be on an equality with the sane. The law, however, distinctly recognizes that species of insanity where the subject is deprived of his reason but a portion of the time, or deprived of his reason, either temporarily or permanently, only upon certain subjects. Instances of this character are not rare. They constitute the major portion, if not all, of the reported cases. Early in the history of English jurisprudence the courts did not make a distinction between different degrees of insanity. Insanity was regarded as a fixed term in law, having a certain meaning. If a man were insane on one subject, he was supposed to be insane on all subjects, and for all purposes. Continuing, the court says that in suits to avoid contracts and conveyances on the ground of insanity, it is settled law that the insanity must have entered into and induced the conveyance or contract; in other words, that it was not the act of the free and untrammeled mind, and that on account of the diseased condition of the mind the person entered into a contract or made a conveyance which he would not have made had he been in the possession of his reason. In the case of wills in most all jurisdictions it is held that the insanity available for the purpose of invalidating the will must be of a kind and degree that clearly

affected the testator's disposition of his property, so that the disposition attempted to be made can not be said to have been that of the testator, but the result of mental disease. In criminal proceedings, where the defense is insanity, the universally recognized rule is that, before the defendant can escape punishment, it must appear that the insanity induced the commission of the crime, and that the defendant, because of the diseased condition of his mind, could not understand the consequences or moral enormity of the act, or had not the power of resisting the impulse to commit the crime. And the court holds here that there is no valid reason why the rule regarding monomania or partial insanity should not be applied in the determination of questions involving the statute of limitations.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine (Philadelphia), February 8.

1 *Nature of Typhoid Fever. Eugene Wasdin.
2 Tuberculosis of the Eye. Allen T. Haight.
3 Malarial Iritis: Report of a Case. Sidney D. Jacobson.
4 *Phlegmon and Fistula of the Lower Jaw, Consecutive to Eruption of the Wisdom Teeth. Fracture of the Bone or Fractures of the Teeth and Infection After Extraction. Thomas H. Manley.
5 *Peripheral Anesthesia Paralysis: With a Report of Three Cases. A. H. Levings.
6 Black Vomit in Inflammation and Injury of the Peritoneum. John H. Landis.
7 The Aspect of Disease as Seen in Arctic Alaska. Ernest W. Kelsey.

Medical News (N. Y.), February 8.

8 *The Surgical Treatment of Ascites Due to Cirrhosis of the Liver. George E. Brewer.
9 *On the Etiology of Cirrhosis of the Liver. James K. Crook.
10 *On the Treatment of the Alcoholic Cirrhoses of the Liver. George M. Converse.
11 *On the Diagnosis of Cirrhosis of the Liver. J. C. Wilson.
12 *Cirrhosis of the Liver as Seen in Children. W. C. Hollopeter.
13 *Intestinal Obstruction Due to Gallstones. Lewis S. Pilcher.
14 Percussion of the Lower Border of the Liver. Albert Abrams.
15 Tumors of the Liver. George R. Fowler.

New York Medical Journal, February 8.

16 *Age of First Menstruation on the North American Continent. George J. Engelmann.
17 *The President's Address, Southern Surgical and Gynecological Association. Manning Simons.
18 *Closure of the Abdominal Incision, with Remarks upon the Cause and Prevention of Ventral Hernia. I. S. Stone.
19 *Gastrostomy and Retrograde Dilatation in Impermeable Benign Traumatic Stricture of the Esophagus by the Abbe Saw-string Method. Hugh M. Taylor.
20 *What Shall We Do with the Consumptive? Antonio Fanoni.
21 The Management of the Tendency of the Upper Fragment to Tilt Forward in Fractures of the Upper Third of the Femur; a Question of Priority. Newton M. Shaffer.
22 The Anachronism of the Coroner's Inquest. H. R. Purdy.

Medical Record (N. Y.), February 8.

23 The Diagnosis of Pericarditis. Arthur R. Edwards.
24 *Dengue: A Study of Its Mode of Propagation and Pathology. Harris Graham.
25 *Treatment of Vessels from Yellow Fever Ports. Edmond Souchon.
26 Nephrectomy—A Clinical Study of Four Cases. Louis J. Ladinski.

Philadelphia Medical Journal, February 8.

27 *Regenticides Not Abnormal as a Class—A Protest Against the Chimera of "Degeneracy." E. C. Spitzka.
28 *Tumor of the Brain Localized Clinically and by the Roentgen Rays—With Some Observations and Investigations Relating to the Use of the Roentgen Rays in the Diagnosis of Lesions of the Brain. Charles K. Mills and G. E. Pfahler.
29 The Treatment of Paralytic Attacks. A. Pick.
30 *A Case of Cerebral Bulbar Palsy, with a Study of the Localization of the Tongue and Lip Centers. Charles L. Dana.
31 *Myasthenia Gravis (Asthenic Bulbar Paralysis). L. Wharton Sinkler.
32 *Scleroderma and Sclerodactylia. B. Sachs.
33 *Hypochondria. F. X. Dercum.
34 Fibroma of the Upper Dorsal Region of the Spinal Cord; Removal; Death and Autopsy. M. Allen Starr.
35 The Surgery of the Spine. Samuel Lloyd.
36 *The Sensory Segmental Area of the Umbilicus. William G. Spiller.
37 *Remarks on the Treatment of Syphilis of the Nervous System. Joseph Collins.
38 A Case of Cerebellar Tumor. James Hendrie Lloyd and T. Percival Gerson.

Boston Medical and Surgical Journal, February 6.

39 The Proposed Boston Academy of Medicine. J. G. Mumford.
40 *A Plan for the Municipal Control of Tuberculosis in Boston. Agnes C. Vietor.
41 *Six Cases of Operation for Cleft Palate. C. A. Porter.
42 *The Treatment of Congenital Cleft Palate by Mechanical Appliances. George A. Raymond.
43 Rabies: Report of Cases. Charles J. Patton.

St. Louis Medical Review, February 8.

44 Report of a Case of Congenital Absence of Auricle and Auditory Canal. Robert M. Ross.
45 *The Treatment of Tuberculosis—A Word for Climate. Arch Dixon, Jr.

Cincinnati Lancet-Clinic, February 8.

46 *Spinal Cocainization. Charles A. L. Reed.
47 The Crime of Vera Cruz. Brose S. Horne.

Northwestern Lancet (Minneapolis), February 1.

48 *Some Points Concerning Irreducible and Strangulated Hernia. J. B. McGaughey.
49 Fractures of the Neck of the Femur, and Their Management. W. E. Rochford.
50 A Case of Cerebellar Hemorrhage. Lester W. Day.
51 An Interesting Case. G. H. Mesker.

Pediatrics (N. Y.), January 15.

52 Bottle-fed Babies. Wm. Z. Holliday.
53 Involuntary Micturition in Children. G. Frank Lydston.
54 Treatment of a Case of Pertussis with Cerebral Engorgement. J. F. Rinehart.

Medical Age (Detroit, Mich.), January 25.

55 The Cult of Centenarianism. P. H. Kinnear.
56 The Use of Opium in Lead Poisoning and in Cardiac Disease. Charles R. Wilson.
57 Relief of Pain in Neuralgic Conditions. E. H. Sickler.
58 The Importance of the Trained Nurse. C. C. Mapes.

American Journal of the Medical Sciences (Philadelphia), February.

59 *Affections of the Mouth and Throat Associated with the Fusiform Bacillus and Spirillum of Vincent. Emil Mayer.
60 A Case of Acute Cholecystitis with Gangrene; Cholecystectomy; Recovery. Francis D. Donoghue.
61 *Phrenic Nerve Injuries. Report of a Case. Anatomical and Experimental Researches and Critical Review of the Literature. W. E. Schroeder and F. R. Green.
62 A New Factor in the Etiology of Malarial Fever, Indicating New Methods of Treatment. A. F. A. King.
63 *Angina Pectoris. Beverley Robinson.
64 The Pathology of the Healed Fibrous Adhesions of the Pericardium. H. Gideon Wells.
65 A Case of Fibroma Molluscum. M. B. Hartzell.
66 *Herpes Zoster and Its Relation to Internal Inflammations and Diseases Especially of the Serous Membranes. Roland G. Curtin.
67 *The Changes Occurring in Striped Muscle in the Neighborhood of Malignant Tumors. Frank P. Anzinger.
68 A Case of Ophthalmia Neonatorum Caused by the Diplobacillus of Morax and Axenfeld. E. Andrade.
69 Forward Dislocation of the Head of the Fibula. J. F. Rinehart.
70 *A Note on Osetophytes of the Nasal Chambers. Alexander W. MacCoy.
71 A Review of Some Recent Literature on Certain Infective Diseases. Aloysius O. J. Kelly.
72 Report of a Case of Fibrinous Bronchitis, with a Review of All Cases in the Literature. Milton Bettmann.

Woman's Medical Journal (Toledo, Ohio), December, 1901.

73 Postpartum Surgery. Bertha Van Hoosen.
74 Some Experiments with Antiseptic Solutions in the Oral Cavity. Esther Mitchell.

Clinical Review (Chicago), February.

75 On the Etiology of Goiter. S. R. Slaymaker.
76 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.
77 Causes and Treatment of Sterility. Oscar J. Price.

Albany Medical Annals, February.

78 *On the Value to the Physician of Modern Methods of Diagnosis. Henry L. Elsner.
79 *Tropical Diseases as Observed in the Philippines. (Concluded.) R. W. Andrews.

Toledo Medical and Surgical Reporter, February.

80 The Lithemic Condition. Charles L. Van Pelt.
81 Empyema. W. D. Stewart.
82 A Case of Ovarian Tumor. Stephen A. Freund.

Oklahomá Medical News-Journal (Oklahoma City), January.

83 Shock—Its Prevention and Treatment. J. B. Rolater.
84 Hypodermoclysis of Normal Salt Solution in Anemic Heart Murmur, with a Report of Three Cases. Ira B. Bartle.
85 Neoplasms Complicating Pregnancy and Labor. James G. Lynds.
86 Foreign Bodies in the Ear. Frank C. Todd.

Medical Examiner and Practitioner (N. Y.), January.

87 *Rectal Examination for Life Insurance. Rufus D. Mason.
88 Appendicitis as Related to Life Insurance. Hal C. Wyman.
89 *What Bearing Have Skin Diseases upon Longevity. Charles W. Allen.
90 The Blood in Life Insurance Examination. W. D. Schauffler.
91 Heart Strain in Life Insurance. S. S. Herrick.
92 Endocardial and Exocardial Murmurs. George S. Mathews.
93 Albumin Testing. Frank S. Grant.
94 The Reflexes in Their Relation to Life Expectancy. (Concluded.) J. Crocq.

95 Crime and Its Remedy. T. C. Claflin.
96 The Good Life Risk. C. A. McCollum.
97 Résumé of the Report on the Acceptability of Glycosurics. Armand Siredey.
98 Insurance Against Agricultural Accidents. Melite E. Chartier.
99 Where Can Life Insurance Examinations Be Best Made? D. Lichty.
100 The Relative Importance of Diseases of the Heart Muscle and the Heart Valves. Louis F. Bishop.

New York University Bulletin of the Medical Sciences, October, 1901. (Received Jan. 24, 1902).

101 Phlorhizin Diabetes in Goats and Cats and the Non-Production of Sugar from Fat in Diabetes. Julius F. Atrega and Graham Lusk.
102 Metabolism in Diabetes. Graham Lusk and W. L. Foster.
103 The Cephalic Index. Henry L. Winter.
104 Report of a Case of Traumatic Rupture of the Spleen, Splenectomy with Recovery. H. A. Haubold. With Observations on the Blood. I. B. Goldhorn.
105 A Further Contribution to the Knowledge of the Excretion of Organic Phosphorus in the Urine. John A. Mandel and Horst Oertel.
106 The Disinfection of Sleeping Cars. Robert J. Wilson.
107 The Urine as a Soil for Bacterial Growth. William H. Park.
108 A Thread-Test of the Acidity of the Stomach Contents. Edward K. Dunham.
109 Simple and Convenient Apparatus for the Anaerobic Cultivation of Bacteria. Edward K. Dunham.
110 A Note on the Physiological Action of Alcoholic Stimulants. Alphonse A. Wren and Horst Oertel.

Medicine (Detroit, Mich.), February.

111 *Valvular Heart Disease in Relation to Pregnancy and Labor. J. Clarence Webster.
112 *The Recognition of Butyric Acid in Stomach Contents. J. H. Salisbury.
113 Latent Diffuse Gangrene of the Lung with Rupture and Fetid Pleurisy. James M. Anders and Joseph McFarland.
114 Chemic Aspects of Cocain Untoward Effects in Spinal Anesthesia. C. S. N. Hallberg.
115 A Specimen of Bothriocephalus Latus. David Riesman.
116 Stoppage of the Heart in Death from Violence. W. Ramsay Smith.

Medical Review of Reviews (N. Y.), January 25.

117 A Study of Postoffice Criminals. Wm. L. Robins.

Hot Springs Medical Journal, January.

118 Chronic Lacerations of the Perineum. J. G. Carpenter.
119 Galvanism as a Remedy for Uterine Hemorrhage. Edwin Walker.

Bulletin of the Johns Hopkins Hospital (Baltimore), January.

120 Jacob Bigelow—A Sketch. J. G. Mumford.
121 *Proper Footwear and the Treatment of Weakened and Flat Feet by Mechanical Devices for Maintaining the Adducted Position. John A. Sampson.
122 *Mastitis in Typhoid Fever, with the Report of Three Cases. Thomas McCrae.
123 Preliminary Report on the Blood in Two Cases of Filariasis. W. J. Calvert.

Kingston Medical Quarterly, January.

124 Chemistry. I. Wood.
125 Clinical Cases in Hotel Dieu Hospital. E. Ryan.
126 The Use of Bone Chips in Osseous Cavities. D. E. Mundell.
127 Gunshot Wound of the Left Shoulder—Removal of the Whole Upper Extremity. W. G. Anglin.
128 A Case of Actinomycosis of the Liver. W. G. Anglin.

Louisville Monthly Journal of Medicine and Surgery, February.

129 Preventive Medicine. T. H. Baker.
130 *Movable Kidney, and Its Treatment Through Lumbo-abdominal Incision. A. M. Cartledge.
131 *The Modern Small-bore Projectile and Its Effects. Thomas L. Butler.
132 New and Improved Rectal Instruments. J. Rawson Pennington.
133 Worms in the Intestines. J. B. Scholl.
134 Hour-Glass Contraction of the Uterus and Retained Placenta —Arm Presentation. L. G. Contri.

Illinois Medical Journal (Springfield), February.

135 Mediastinal Tumor. E. Fletcher Ingals.
136 Cases Illustrating the Plastics of the Face. Weller Van Hook.
137 Conservative Gynecology and Electricity. F. C. Vandervort.
138 Tuberculosis of Bladder, with Report of Case. P. L. Markley.
139 Gumma of the Spermatic Cord, with Report of a Case. R. R. Campbell.
140 Medical Inspection of Schools. Martha Anderson.

Brooklyn Medical Journal, February.

141 The Clinical Differentiation of Brain Syphilis and General Paresis. W. A. McCorn.
142 The Therapeutics of the X-Rays. John A. Lee.
143 *The Question of Drainage in Appendicitis with Outlying Peritoneal Infection. Richard W. Westbrook.
144 A Case of Traumatic Neuritis of the Median Nerve. A. T. Bristow.

Canadian Journal of Medicine and Surgery (Toronto), February.

145 Treatment of Laryngeal Tuberculosis. J. Price-Brown.
146 Chronic Ulceration of Stomach Simulating Cancerous Disease —Relation of a Case of Gastro-enterostomy with Murphy Button—Recovery. James F. W. Ross and E. B. O'Reilly.
147 *Vaccinal Protection Against Smallpox. P. H. Bryce.
148 Is Vaccination What It Should Be? A. J. Harrington.

Vermont Medical Monthly (Burlington), January 25.

149 Bladder Troubles in Women. A. Lapthorn Smith.
150 Tetanus and Vaccination. C. S. Caverly.
151 Gunshot Wounds of the Abdomen. Henry Janes.
152 Some Remarks Relative to Two Cases of Tetanus Following Vaccination at Burlington, Vermont. Clarence H. Beecher.

Buffalo Medical Journal, February.

153 *Pelvic Lesions in Relation to the Distinctive Effects upon Mental Disturbances. A. T. Hobbs.
154 Renal and Bladder Tuberculosis. J. Henry Dowd.
155 Concerning the Welfare of the Medical Society of the County of Erie. William C. Phelps.
156 The Present Outbreak of Smallpox in Buffalo. Walter D. Greene.
157 A Century of Medical History in the County of Erie—1800-1900. (To be continued.) William Warren Potter.

Medical Times and Register (Philadelphia), January.

158 Tumors and Their Treatment. W. H. Walling.
159 The Responsibility for the Recent Deaths from the Use of Impure Antitoxins and Vaccine Virus. W. R. Inge Dalton.

Mississippi Medical Record (Vicksburg), January.

160 Fracture of the Internal Malleolus and Tibia. W. O. Roberts.

Southern Medical Journal (La Grange, N. C.), January.

161 *Typhoid Perforation: Its Frequency, Prognosis, Diagnosis and Treatment. Hugh M. Taylor.
162 Dipsomania. S. Scruggs.

Columbus Medical Journal, January.

163 Cancer of the Cervix Uteri with Special Reference to Diagnosis. D. Tod Gilliam.
164 Address, Columbus Academy of Medicine. J. C. Lawrence.
165 Chloroform in Labor. W. E. Gordon.

Georgia Journal of Medicine and Surgery (Savannah), January.

166 *Protargol: Its Efficacy in Ophthalmia Neonatorum and Trachoma. J. Lawton Hiers.
167 Facial Erysipelas. Geo. M. Norton.
168 *Gastrostomy and Retrograde Dilatation in Impermeable Benign Traumatic Stricture of the Esophagus and Internal Esophagotomy by the Abbe Sawstring Method. Hugh M. Taylor.
169 Cough and Treatment in Pulmonary and Laryngeal Tuberculosis. Henry Levien.
170 *The Treatment of Fractures of the Femur with the Ambulatory Pneumatic Splint. Walter B. Metcalf.

Charlotte Medical Journal, January.

171 *Foreign Bodies in the Esophagus. J. W. Long.
172 Cancer of the Uterine Cervix. Geo. W. Pressly.
173 Vaccine Virus, with Special Reference to the Dangers of Glycerinated Lymph. F. J. Runyon.
174 Shall the Negro Practice Medicine? W. T. English.
175 Puerperal Eclampsia. H. R. Coston.
176 Koplik's Spots as a Diagnostic Sign of Measles. W. C. Brownson.
177 The Artificial Delivery of the Placenta. B. H. Blair.
178 (Medical Practice) Then and Now. J. A. Reagan.

Mobile Medical and Surgical Journal, January.

179 Wounds of the Heart. L. L. Hill.
180 Diseases of the Gall-Bladder. W. R. Jackson.
181 Some Clinical Thoughts Concerning Amebic Dysentery. W. G. Harrison.
182 General Paresis. E. D. Bondurant.

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1. **Typhoid Fever.**—From a general study of typhoid fever Wasdin has come to believe that the treatment of the disease should be directed more energetically to the destruction or attenuation of the germ in what he considers its primary pneumonic colony, not lessening, however, the great importance of the destruction of the secondary intestinal or terminal colonies. He has sought those germicides that will not be injurious to the patient and will be effective, and this he has found in the chemical recently described by Novy, benzylacetyl peroxid, which is germicidal in aqueous solution, 1 to 33,000, being equivalent to 1 to 1000 bichlorid solution. He has found this innocuous in his patients when given by the mouth or hypodermically in the abdominal cavity after laparotomy and in powders of 3 decigrams three times a day for an indefinite time. It is rapidly eliminated as a hippuric acid by the kidneys. Novy will soon give fuller details. Wasdin has found its application in typhoid fever to have very happy results, and its use has been directed to decrease the germs in the primary lung colony and also in its secondary intestinal colony, and it has been used by hypodermoclysis to combat terminal expressions with the result that in 24 cases the disease has been limited almost entirely to the expression of intoxication from its primary focus, the intestinal symptoms being entirely in abeyance. He suggests the importance of the danger of laying

of dust in the streets by polluted water, and suggests that it would be safer perhaps to filter the street-sprinkling supply and allow the drinking of hydrant water.

4. **Phlegmon and Fistula of the Lower Jaw.**—Manley summarizes his article as follows: Perforative endostitis of the lower jaw is an infective lesion usually consecutive to caries of the crown, incomplete extraction, or the late eruption of the third molar. Infection first provokes an alveolar abscess, with widespread tumefaction and rigidity of the jaw. This may be followed by dislodgment of the imbedded fang or by alveolar necrosis. Perforative osteitis from a dead fang occurs through the least vascular surface of the mandible, by way of the dental canal; this is followed by an abscess, ultimately degenerating into a chronic, unsightly fistula. Surgical aid is resorted to, rather as a means of removing the blemish than because of severe pain. Operative intervention embraces the complete extraction of diseased fangs; dissection away of scar tissue; the thorough curettage of the sinus, and the closing of the breach in the soft parts in such a manner that little or no deformity will result after healing. Drainage must be entirely from the base of the alveolus into the mouth, hence the importance of frequent cleansing of the gums with antiseptic lotions until repair is complete.

5. **Peripheral Anesthesia Paralysis.**—A study of three cases reported by Levings shows that the muscles most frequently implicated are those supplied by the musculocutaneous, circumflex, musculospiral and median nerves. Few of these could be injured in the axilla by stretching, but all can be injured in the neck or between the first rib and the clavicle by pressure, and the lesson to be learned is that during operative procedure the arms should never be forcibly abducted or extended and maintained in this position for any considerable time. Forcible extension or abduction of the arm for the purpose of practicing artificial respiration or while clearing out the axilla in carcinoma, or other operative measures about the shoulders for short periods of time, is not followed by paralysis.

8. **Cirrhosis of the Liver.**—The treatment of hepatic cirrhosis by the Talma-Morison operation is discussed by Brewer, who reports 5 cases and analyzes in tabular form about 50 more from the literature. From reviewing these statistics he finds at least 6 patients who have been cured of ascites by this procedure, and who have remained well for two years or more; 6 others have died, with relief of this symptom from 2 to 6 months before death, or had not been under observation long enough to demonstrate a permanent cure. Another patient suffering from hemorrhage of the alimentary canal was promptly cured by this operation. Many others have been materially benefited. Thirty-eight have recovered from the operation, and considering that the great majority of these were within a few weeks of inevitable death, he thinks that it should encourage us to suggest operation at an earlier and more favorable stage of the disease. If this suggestion is followed he believes that statistics will show a great improvement over those he is able at this time to present.

9. **Etiology of Hepatic Cirrhosis.**—According to Crook there are only three forms of hepatic cirrhosis that have gained an unequivocal position in medical terminology. Venous atrophic cirrhosis, the original cirrhosis of Laennec, is by far the most common form and the only one recognized by many writers. He analyzes the cases reported by the New York Health Board for 11 years, nearly 5000 in number, and finds that the largest number of cases occurred between the 25th and 45th years. It is rare in youth and infancy and in old age. There are 9 cases, however, reported under one year of age, which disposes apparently of the doubt of the existence of the disease in infancy. The great majority were males, 62.28 per cent., and nearly three-fourths were of foreign birth. This goes to show that the native American is much less liable to the condition; while of the foreigners the Irish furnish the larger proportion; the Germans are a short distance behind. Among the exciting causes, alcoholic stimulants take first rank, and even the milder alcoholic beverages are not innocuous in this direction. According to Lancereaux, *vin ordinaire* is a common cause in France. Syphilis has been credited with an important influence, but the difficulty of obtaining information makes reliable statistics scarce. No doubt in some cases it is combined with alcoholic excess. Other conditions mentioned are malaria, infectious diseases such as typhoid, over-eating of highly spiced foods, certain mineral poisons, etc. According to Von Kahlden, cases of acute yellow atrophy of the liver may also indirectly produce cirrhosis. Other forms mentioned are the hepatic cirrhosis of Hanot, where the liver is uniformly large and smooth, moderately granular on the surface, differing from the ordinary venous cirrhosis in the tendency of the liver to remain enlarged, probably having the same etiologic factors, though occurring rather earlier in life, and biliary cirrhosis which consists fundamentally in a primary affection of the biliary reticulum, more especially in an angiocholitis or a periangiocholitis of the bile-ducts of small and medium caliber. Here it seems highly probable, he says, that the immediate cause of the trouble is an upward extension of some pathogenic influence through the biliary system.

10. **Treatment of Alcoholic Cirrhosis.**—The logical indications, according to Converse, are the suppression of alcohol, a non-irritating and a minimum toxic diet, chiefly milk, until the gastro-intestinal symptoms and congestion have subsided and gradually changing to eggs, vegetables, etc., and, last of all, meat. Purgatives and laxatives should be given judiciously at intervals. The patient should take advantage of rest, open air, moderate hydrotherapy, and lead as careful a life as his financial situation and occupation will permit. When ascites develops, it is all important to differentiate between the atrophic and the hypertrophic forms, but the treatment should be mainly on the same lines. If accumulation is due to mechanical obstruction in the portal system, frequent tappings will probably only precipitate the end.

11. **Diagnosis of Hepatic Cirrhosis.**—The following are the conclusions of Wilson's article: 1. The term cirrhosis is an unfortunate one. It has been applied to conditions wholly unlike etiologically, anatomically and clinically, which have, however, in common an overgrowth of the connective tissue of the liver. 2. The term chronic interstitial hepatitis is to be preferred. 3. Alcohol is by far the most common cause of interstitial hepatitis alike in the cases in which the liver is of normal size or slightly enlarged, in the atrophic form and in the hypertrophic form. 4. The symptoms of this condition are in many cases ill-defined and not rarely the liver is not changed in size or contour. The clinical diagnosis in a large proportion of the cases is therefore impossible. 5. In the presence of definite symptoms and of the signs of enlargement or diminution of the liver,, that is to say, in terminal conditions, the diagnosis is commonly a simple matter.

12. **Infantile Cirrhosis.**—According to Hollopeter, who reports two cases, cirrhosis of the liver in infants and adolescents is not so infrequent as clinicians infer and cirrhosis in children can generally be relegated to either syphilitic or alcoholic types, with a very small percentage as sequelæ of the acute infectious diseases. As a rule the premonitory symptoms are disguised by a long train of gastro-intestinal irritations that render early diagnosis uncertain.

13. **Intestinal Obstruction from Gallstones.**—Pilcher reports a case, and considers the symptoms and diagnosis. It is not unusual, as in the case reported, for notable abdominal symptoms to be entirely absent. The diagnosis does not usually declare itself until the lower portion of the small intestine is reached, which he considers as probably due to localized irritation and circumscribed peritonitis, with its attendant paresis, probable adhesions and possible acute angulation. The diagnosis must often be obscure. He suggests exploratory operation, holding that while in many cases it may be fruitless and that some cases may be operated on which might have recovered if left alone; nevertheless the operative failures will bear but an insignificant relation to the increased number of recoveries of patients who otherwise would have died.

16.—See abstract in THE JOURNAL, xxxvi, p. 1650.

17.—Ibid., xxxvii, p. 1481.

18.—Ibid., p. 1480.

19.—This article has appeared elsewhere. See THE JOURNAL of January 4, title 50, p. 61.

20. **Tuberculosis.**—Fanoni takes an extreme view in regard to the danger of contagion or infection from consumption and would restrict the marriages of consumptives. He insists on early diagnosis and reporting of cases and the isolation of patients. He is sanguine enough to say that a battle waged in this manner against consumption would stamp out the disease in a few years.

24. **Dengue.**—Graham finds that dengue in Beyrouth, Syria, offers peculiar advantages for its study. He experimented with the mosquito and commenced a series of investigation quite analogous with those of Reed and Carroll to decide whether these insects carry the infection. Besides clinical observations which pointed strongly to this, he experimented by direct inoculation, infecting his mosquitoes from patients suffering from the disease and then placing them under nettings with healthy persons, who readily submitted to the experiment at a cheap rate and produced the disease with the entire exclusion of other insects. To further make his experiments conclusive he carried the mosquitoes out into the country villages where dengue was not to be found, and there made his inoculations. He thinks his experiments prove that dengue is not a contagious disease, but that certain forms of culex may carry it from one person to another. Blood examinations carefully made revealed an ameboid form inhabiting the blood corpuscles which he has been able to study throughout the most of its life history in the blood. He illustrates this, and says it may not be absolutely proven that this hematozoon is the cause of dengue, but its constant presence in the red corpuscles during fever, its resemblance to the parasite of the Texas cattle plague, and its similarity in mode of growth and propagation to the malarial parasite all point in the same direction and lead us to believe by analogy, if in no other way, that in this parasite we have the cause of dengue.

25. **Yellow Fever.**—Souchon criticises the recommendations of Reed and Carroll as regards quarantine, quoting large numbers of cases which seem to him to prove that disinfection alone without quarantine is insufficient. He says that the final recommendations of Reed and Carroll that the disinfection of vessels before departure be thoroughly carried out, together with abolition of all causes of yellow fever in the ports, is the key to the situation. If this can be done quarantine regulations may be altered.

27. **Regenticides.**—Spitzka's article is an elaborate historical study of the mental conditions of assassins of prominent individuals. It covers an immense field and goes a long way to show that in comparatively few cases are these criminals to be considered insane.

28. **X-Ray in Brain Tumors.**—Mills reports a case and Pfahler discusses the *x*-ray diagnosis. The tumor was correctly located during life, but only a portion of it was removed. The patient died two hours after operation. The only previous case to the one reported is that of Church of Chicago, where a cerebellar tumor was diagnosed during life and found by autopsy where the skiagram showed it. Obici and Ballici have also showed the presence of tumor, but postmortem. Pfahler has experimented on living individuals and also cadavers with the *x*-ray to detect tumors, and from his experiments draws the following conclusions: 1. That fibrosarcomata, and probably other tumors, can be photographed in the living subject and their location and extent shown. 2. That various tumors can be photographed in their most common locations. 3. That other abnormalities and deficiencies in brain tissue itself can be photographed, which will probably be of value in the diagnosis of cysts, softening and hemorrhages. 4. That over-exposure of the third series and the under-exposure of the fourth show that good results will only follow the most careful technique and keen judgment as to the special conditions in each case. 5. That the shadows obtained in normal parts of the brains studied indicate that great care is necessary in the interpretation of any shadow obtained in the living subject.

30. **Tongue and Lip Centers.**—With the report of a case of cerebral bulbar palsy, Dana describes the localization of the tongue and lip centers, both in view of clinical experience as reported in the literature and from experiments observed. His conclusion is that in the human brain the lip and the tongue centers are closely connected and more or less identical. One group of centers for the tongue is in relation with the articulatory movements of the lips, and another with the movements of mastication, opening and shutting the mouth and deglutition. The area for the excitation of movements of the tongue is a wide one, being associated probably in its lower parts with the articulatory movements and in the upper parts with the masticatory movements. The centers lie at the base of the pre- and post-central convolutions. Paralysis of the tongue, and to some extent of the lips, from a one-sided cortical lesion occurs, and may perhaps be explained by the fact that in many individuals the brain becomes accustomed to use only the center of one side, and that temporary paralysis will frequently follow an injury to the center in use. This will also explain the difficulties of deglutition and often of articulation in hemiplegia. Dana also doubts that permanent bulbar paralysis can be produced by cortical lesion of one hemisphere, if so, it must be considered an anomaly.

31. **Myasthenia Gravis.**—Sinkler describes the disease, having studied all the reported cases. He describes its essential features, which are weakness beginning in the bulbar muscles—those of the tongue, lips, larynx and eye—with exhaustion and apparent recovery after rest, lack of sensory symptoms and the myasthenic reaction, that is, exhaustion by prolonged faradic stimulation as from voluntary effort, but no exhaustion by galvanism. The etiology is also discussed. It seems to occur alike in both sexes, and frequently follows some acute illness. There may be a family tendency to neuroses, but there is no constant predisposing cause. Ptosis is one of the most common symptoms, occurring perhaps only in the latter part of the day. Other symptoms are ocular muscle weakness, difficulty in deglutition and articulation, weakness, especially in the neck, and dorsal movements, and sometimes facial paralysis—all aggravated by various conditions such as cold weather, menstruation and general affections—normal reflex and absence of Babinski reflex. In most cases no postmortem lesions were discovered; rarely degeneration existed in the medulla; there was nothing to settle the pathology. The most reasonable theory is that there is some toxin attacking the motor neurons, but we are ignorant of the character of the toxemia. The well-marked cases are easily diagnosed; bulbar paralysis is readily distinguished by the ptosis and distribution of the lesions throughout the organism, the less progressive character and the absence of sensory disorders when the limbs are involved. The organic symptoms show up clearly from hysteria and neurasthenia. Nearly 50 per cent. of the cases end fatally. The disease ranges in duration from a few days to many years. It is difficult to say whether complete recovery ever occurs. No treatment seems available, strychnia is useless, and electricity is likely to do more harm than good. Arsenic has apparently been of service in some diseases, but its specific action is questionable. The best line of treatment is building up the general health, improving nutrition, avoiding exposure and carefully regulating the exercise. In fact, the treatment is much like what would be employed in marked neurasthenia.

32. **Scleroderma and Sclerodactylia.**—These conditions are discussed and cases reported by Sachs, who calls attention to the resemblance in effect of treatment between this condition and myxedema, thyroid gland having remarkably good effects in both. He calls attention to the typical facies of the disease, the pinched and attenuated nose, sunken cheeks, and retraction of the upper lip in advanced stages. As regards thyroid he does not say that it does good in all cases, but that it is well to try it. Everything else has been tried without much benefit, and this seems to be the most hopeful medication.

33. **Hypochondria.**—Dercum describes the symptoms and differentiates hypochondria from hysteria, neurasthenia, etc. He also calls attention to the necessity of carefully distinguish-

ing between the condition itself and the various hypochondriacal stages observed in some insanities. Simple or true hypochondria is a well-defined affection, he says, which may last for an entire lifetime. It may be general in its type, or specialized on a few functions on which the attention of the patient is fixed, as in the gastro-intestinal or sexual form. It may appear early in childhood.

36. **Sensory Area of the Umbilicus.**—Spiller reviews the subject and reports a case. He concludes from his study: 1. That Head is probably correct in placing the umbilicus between the ninth and tenth thoracic sensory areas. 2. That the Babinski reflex may be absent in cases of lesion of the lumbar and sacral regions of the cord, though the clinical symptoms may indicate merely that the cord is compressed above the lumbar region. The absence of the Babinski reflex in such cases may possibly be a valuable sign of disorganization of the lumbar and sacral regions. 3. That while loss of the patellar reflexes may occur from transverse lesions of the cord above the lumbar region, the cause of this loss in a certain number of cases is to be found in lesions of the area through which the reflex arc passes.

37. **Nervous Syphilis.**—Collins points out the difference between parasyphilitic and syphilitic conditions, holding that the latter are not amenable to antisyphilitic medication. He gives mercury or iodin for other indications, and in cases where tabes and paresis occur within a comparatively short period after the infection and proper antisyphilitic treatment has not been employed, he would employ it. He recognizes syphilitic pseudo-tabes and syphilitic pseudo-paresis. As regards the recovery from syphilis he is dubious, and does not agree with syphilographers who teach the rapid and complete curability of syphilis. There is nothing that will absolutely insure a syphilitic of perfect safety in the future. He also says that the time to begin antisyphilitic medication is when the diagnosis is made. Unfortunately we must often wait for this. His method of using mercury is preferably by inunctions and next hypodermically, rarely by the mouth or inhalation. No definite dose can be given, each case requiring individual treatment. The patient should never realize the toxic effects of the drug. The maintenance of nutrition and the general tone of the patient are insisted upon. In treating syphilitic nervous disease mercury should be given first, in exudative nervous syphilis, while the iodids should be given preferably when the nature of the nerve lesion is that of granuloma. The dose of iodid must be regulated by the individual case and the duration of the treatment will depend on the readiness with which the patient responds. The general treatment is that for a patient suffering from depressing neurasthenia. The special treatment applicable to each case will depend upon the intensity and seat of the lesion.

40. **Tuberculosis.**—Victor deprecates the prominent emphasis on the contagion of tuberculosis as an error in fact as well as judgment, and as liable to create a condition of panic which does infinite harm and does nothing toward combating the disease. A large proportion of the community has tuberculosis and every little symptom is magnified by public fear. The problem is a dual one. Tuberculosis is a diseased condition caused by germs of low vitality which die rapidly under unfavorable conditions, but its diminution by attacking it outside the living body is impossible because of its strong entrenchment in the bodies of people in the condition of lowered vitality. As long as such people exist, its virulence can never be destroyed. The great sources of such lowered vitality are insufficient food, insufficient air and light, overwork and worry. From this it follows that the fundamental factor in the existence and increase of tuberculosis is the health of the mass of the people, and that the community which does not vigorously attack the removable causes that lower this mass-health, passively supports a city laboratory for the manufacture and maintenance of virulent cultures of tubercle bacilli. The only definite decrease in tuberculosis is such as that recorded: 1, in the cures effected in patients who adopt some modification of the open-air life, with superfeeding and freedom from overwork and worry; 2, the improvement in certain New England statistics, the only changed factor of general extent being the almost universal use of the bicycle and other reactions tending to increase outdoor life, especially among women; 3, the decreasing statistics of tuberculosis in a German village where tuberculosis sanatoria were established, the lives of the villagers consciously and unconsciously immitating the good example of the sanatoria. She suggests the following: An unpaid municipal tuberculosis committee of men and women fitted to view the subject broadly. Sub-committees on air and light in tenements and dwellings; in other buildings, as workshops, factories, schools, etc.; on cooking and savory serving of food on large enough scale to give the poorest a chance to be well nourished; on employment, to put the vast army of unemployed or precariously employed in connection with the equally vast field of undone work; on dust and noise, which decrease the available air and light in even the best localities; on nursing and disinfection and so on, and a modern sanatorium located in each section of the city as a living example of the method of living which cures. To these sanatoria selected cases should be sent for short periods to learn the lesson by actual experience; returning to their homes they will themselves be teachers to ever new and widening groups. Finally, but of least importance for the eradication of disease, a distinctly charitable hospital is needed to care for the really destitute and desolate; but with the proper better control of the situation by the whole community, this hospital will not need to be a very large one.

41. **Cleft Palate.**—The following points are mentioned by Porter as of importance in the technique of the operation for cleft palate; 1. Careful and complete denudation of the whole cleft, best accomplished by grasping the tip of the uvula with fine forceps, and cutting from before backwards, on either side, a continuous strip of mucous membrane about one-eighth of an inch in width. If, as sometimes occurs, the edge appears too thin, the flap may be split for one-eighth of an inch before suture, thus giving a broader surface for approximation. Two lateral incisions are then made from the level of the canine teeth, close to the margin of the alveolar arch, back to, and through the fan-like expansion of the tensor palati muscle. Each incision should not be nearer than one-half an inch to the tendon of this muscle where it winds around the hamular process. By these incisions, tension on the stitches through the soft palate is avoided, and after healing the tensor again resumes some of its functions. The levator palati muscle should not be cut and the enlarged tonsils and adhesions should be removed previous to the operation. The most important points are that the edges to be sutured should never be crushed by grasping with forceps and that all tension must be avoided. As a rule too many stitches are used and they are tied too tightly, causing subsequent swelling and cutting out. He puts the suture stitches three-eighths of an inch apart and some distance from the edge of the wound. Usually 6 will suffice. He has used silk previously soaked in balsam of Peru which is better than silver wire or silkworm gut. Rose's position is, without question, superior to any other, and unless contra-indicated, the anesthesia should be chloroform, as allowing more quiet breathing and the absence of mucus. The after-treatment he thinks has been too much neglected. Adhesions about the palate should be divided where present, the soft palate exercised, massaged and made movable by voluntary contraction in adult cases, and by passive motion and stretching with the finger, in children. The power of speaking properly, in spite of good technical results, is always in direct ratio with the time spent in instruction and intelligent effort of the patient. It is possible that enlarged tonsils and adenoids may in certain cases aid in closing the nasopharynx and be of definite advantage in speech. Porter suggests that possibly the submucous injection of paraffin according to Gersuny's method, may be of advantage to diminish the nasopharyngeal space at a point opposite the soft palate.

42. **Mechanical Appliances in Soft Palate.**—Raymond has never seen a case where perfect speech has resulted from the surgical treatment of cleft palate alone. Any careful operator can close the palate and make it a surgical success, but he

never found anything like a physiologic success; hence the failure to produce speech. He therefore believes in appliances fitted and adapted so that even children can become accustomed to them and wear them with as much ease and comfort as a set of artificial teeth and which would be a great help to perfect articulation. He reports a number of cases demonstrating this point.

45. **Treatment of Tuberculosis.**—Dixon believes in the climatic treatment of tuberculosis, but says only general rules can be employed in advising locations. Only trial will show which special place will most benefit a given case. Patients in the infiltrative stage with good hearts, a fair amount of strength, and without nervous manifestations or high temperature, should be sent to high altitudes; but it is usually wise first to send them to a moderate altitude. The more advanced cases should be sent to medium altitudes, and still further advanced cases to a still lower altitude. The two essentials of a good climate for the treatment of tuberculosis are dryness and sunshine.

46.—See proceedings of the Cincinnati Academy elsewhere in this issue.

48. **Strangulated Hernia.**—After general remarks and report of a case, McGaughey summarizes as follows: "1. Every irreducible hernia is a menace to the patient, and it is the duty of his medical adviser to fully explain the possible dangers and to recommend interference. 2. Strangulated hernia should not be subjected to violent or prolonged attempts at reduction, but operation should be resorted to as soon as possible after reasonable attempts to replace it have failed. 3. The sac should be opened in every case. 4. The omentum should be tied securely, and cut off well above the point of constriction. 5. Lavage of the stomach should be made use of prior to the administration of the anesthetic if there has been stercoraceous vomiting. 6. No case not actually moribund should be refused operation."

59. **Ulcero-Membranous Angina.**—Mayer reports a case of ulcero-membranous angina in which numerous bacilli and spirochetæ were discovered, corresponding with those described by Bernheim and Vincent. He reviews what he knows in regard to the disease, giving its nomenclature by various authorities and suggests that it is generally conceded that the presence of virulent bacilli precludes the existence of the diphtheria germ. The symptoms are comparatively insignificant in the beginning, and the prognosis is generally good, but there is a tendency to recurrence. Clinically it is very difficult to differentiate from any one form of specific disease, hence the importance of its careful study. It must be borne in mind that syphilis may be present. A membranous deposit with fusiform bacillus and spirillum may be associated with underlying syphilis. In this case he would say: Treat the angina and eliminate that, if necessary giving iodids until entirely healed. The treatment consists in the use of boric acid solution as a gargle and the local application of iodin and peroxid of hydrogen.

61. **Phrenic Nerve Injuries.**—Schroeder has studied a case of paralysis of the phrenic nerve and has also made experimental observations by pinching the nerve during exposure in tubercular gland operations, and also in animals. Green reviews at length the bearing of these experiments and others on the question of the innervation of the diaphragm. The general conclusions are summed up as follows: "1. From the clinical and experimental data it would seem that the diaphragm is not an essential muscle of respiration. 2. That as the symptoms commonly described as caused by an irritation of the phrenic were uniformly absent not only in the operation but in all of the experimental work as well, it is safe to infer that they may have been due to something other than a simple injury to the phrenic. 3. That while from an anatomic point of view the diaphragm undoubtedly is innervated by branches from the intercostal nerves, this nerve supply is secondary to the phrenic and is insufficient to carry on the action of the diaphragm after a division of the phrenic. 4. That a division of the phrenic nerve, producing a partial collapse of the lower lobe of the lung on the affected side and an atrophy of one-half of the diaphragm, might predispose to infection of the lung or be followed by a diaphragmatic hernia. 5. That a division of one phrenic nerve in man, resulting in paralysis of one-half of the diaphragm only, is not necessarily fatal."

63. **Angina Pectoris.**—Robinson finds typical angina pectoris a rare disease, while the pseudo-angina is comparatively frequent. He thinks the latter is generally of neurotic character, but would be slow to admit the existence of true angina of purely neurotic origin. He reviews the symptoms and etiology at length and remarks in regard to the treatment. Of course, for the treatment of the attack the vaso-dilators—the nitrites and nitroglycerin—are the standbys. The condition of the heart is to be looked after, the hygiene of the patients attended to, and over-exertion, exposure to wind, great heat or cold or rapid changes carefully avoided. The article is too detailed to be fully abstracted.

66. **Herpes Zoster.**—In a former paper entitled: "Is Herpes Zoster a Cause of Pleurisy and Peritonitis?" Curtin raised certain questions which he thinks he can now better answer. A number of cases of herpes are reported complicating pleurisy, Bright's disease, localized peritonitis, meningitis, etc., and rheumatic affections. Their study seems to indicate that inflammation of the serous membrane precedes a zoster, therefore inflammation causes the eruption. The cases here reported settle at least some of the problems suggested in this former paper.

67. **Malignant Tumors.**—Anzinger has investigated the changes occurring in striped muscle in the neighborhood of malignant tumors in a large number of cases, including 30 cases of cancer of the breast, infiltrating the pectoralis, 15 of epithelioma of the lip, and others of carcinoma and sarcoma involving different portions of the body and affecting the adjoining muscle tissue. The changes produced in muscle by invading carcinoma are more marked than those produced by sarcoma, but do not differ essentially in kind. Those produced by sarcoma are chiefly mechanical; those due to carcinoma are mechanical, nutritive and metabolic. Evidences of toxic action are more marked in the latter than in sarcoma. Carcinoma acts more as an active injurious foreign body upon muscle than does sarcoma.

70. **Nasal Osteophytes.**—MacCoy finds the presence of these bodies in the nasal chambers generally situated well back underneath the lower turbinated bone, on the bony septum, and on the floor of the nose, varying in size from a sharp spicula to the small irregular mass. The summary of his paper is as follows: "1. Under an anesthetic, with the little finger as an intelligent probe, certain osseous structures foreign to normal nasal conditions may be found. 2. These osseous masses are osteophytes, having the anatomical structures of such bodies. 3. Osteophytes, clinically, are new conditions to be considered and studied. 4. In operations for deflection of the nasal septum, lack of complete success may result from their presence. 5. Osteophytes are loose in structure and readily removed by proper instruments."

78. This article has appeared elsewhere. See THE JOURNAL of February 15, ¶1, p. 477.

79. **Tropical Diseases.**—In this concluding instalment Andrews describes the symptoms of ankylostomum duodenale as described by him in the Philippines. He states that alcohol, oils, turpentine, etc., and glycerin are all solvents of thymol, and if these should be given while thymol is being administered, there is grave danger of poisoning; also, unless the patient is properly prepared by rest and feeding, it is dangerous. Nevertheless, it was the treatment generally used in the army. The patient was put on a liquid diet for two or three days and the bowels freely opened. On the next day no food was allowed, and then usually 20 grains of well triturated thymol was given in capsules every hour for three hours or until 60 grains had been taken. If the bowels did not open spontaneously, another aperient was given, usually a seidlitz powder, four or five hours after the last dose of thymol. One such course of treatment may be sufficient, but it is well after a week has elapsed to

again examine the feces and if ova are present to repeat the treatment as before, once or oftener. Male fern is given in the same dose as thymol, but was not used after the thymol treatment was introduced. Prevention of contamination of soil and water constitute the prophylaxis. There was frequent disease of the gums; some of these cases may have been sprue. Some of the patients had diarrhea and dysenteric symptoms besides the sore mouth. The various forms of dysentery are noticed in conclusion.

87. **Rectal Examination for Life Insurance.**—Mason calls attention to the rectal conditions which may affect the expectancy of life. He does not advocate thorough examination in all cases, but where anything indicates disease in this region it should be attended to.

89. **Skin Diseases and Longevity.**—Besides the specific skin disorders, cancer and leprosy, there are a number of other cutaneous troubles which have more or less to do with underlying conditions that may affect the longevity of the sufferer, such as glycosuria and the scrofulides, which, if not tuberculous, are probably luetic. The everyday affections which make up the work of the dermatologist, such as acne, eczema, psoriasis, erythema, parasitic disease, impetigo, lichen planus, etc., have not a very marked influence on life duration.

111. **Heart Diseases in Pregnancy and Labor.**—The recognition of the importance of the condition of the heart in relation to pregnancy and labor is largely a matter of the last 30 years, and the text-books before 1871, as a rule, made little mention of it. It is well known that many patients of this class pass through pregnancy and labor without difficulty. Nevertheless it is a matter of serious importance, in some cases requiring the physician's most careful attention. So far as we can judge from the statistics, the most fatal lesion is mitral stenosis. There is, of course, a certain amount of disturbance of the heart in normal pregnancy, but true valvular disease rarely begins in this condition and acute endocarditis is rarely found. When it does occur it must be regarded as more serious than in non-pregnancy. The effects of pregnancy on the woman who has valvular lesions vary greatly and depend upon a variety of factors, such as the extent of the disease, the degree of compensation existing, the general health, habits, etc. There is always a danger, especially when the disease is recent, that fresh fibrin-vegetations may form on the valves, owing to the increased hyperinosemia of the blood. The pregnant woman has, other things being equal, a short life expectancy if she exercises the function of child-bearing, and the danger is increased with succeeding pregnancy. When the compensation is perfect, she may pass through with no more trouble than in normal cases, but in mitral disease, especially where stenosis exists, the most marked symptoms occur. They usually supervene after mid-term, but may develop earlier. The majority of cases which go to term become worse during the last weeks. As regards the influence of cardiac disease in deciding the question of marriage, different views are held. It is very commonly taught that a woman with weakened heart should not marry if her well-being alone be taken into consideration. Some would insist on this restriction only in such cases as mitral stenosis, when the woman's health is not good or some other bodily lesion exists. Careful hygiene should be observed during pregnancy. Where no abnormal symptoms occur no medical treatment is required, but tonics where needed and heart tonics for strengthening the heart muscle. When digitalis is used, a nitrite should also be used to counteract the effect of digitalis in increasing the blood pressure. If the heart failure seems to show, most authorities claim the pregnancy should be terminated, especially when the more severe signs are present. This should be done in the majority of cases, but it should be remembered that the procedure may be as dangerous as a full-term labor, especially when cardiac symptoms are marked. The greatest danger is at the end of the third stage of labor, especially in mitral stenosis cases. The circulation in the uterus is practically checked, the organ being quite anemic and the circulation in the extra-uterine tissues greatly interfered with. This alteration in the circulation throws an extra burden on the already overworked heart, and paralysis may follow. Fritsch's view that death occurs from syncope on account of an insufficient amount of blood reaching the heart, is not proven. When labor occurs the patient should be carefully watched and kept quiet through the first stage. She should not be allowed to pass through the second stage on her own strength, especially if mitral disease exists. Chloroform should be used. Webster advises nitrite of amyl given by inhalation. Hypodermic injections of nitroglycerin may be used. In the third stage, according to his theory of overworking of the heart, the indication is not to conserve but to allow the free escape of a certain amount of blood from the body in order to prevent over-distension of the lungs and the right side of the heart. The patient is kept under chloroform, ether is given hypodermically from time to time, and the nitrite tends to counteract the contractibility of the uterus, and so delay the separation and expulsion of the placenta. This should not be allowed to take place naturally and neither the Dublin or Credé method should be used. The best method is manual separation; allow a certain amount of blood to escape through the torn sinuses, but watch it carefully and watch the heart also at the same time. He thinks that it is not necessary to bleed the patient from other parts while the easy method of bleeding from the uterus is possible. The treatment of these cases during the puerperium is of the greatest importance; rest in bed for several weeks, stimulants, administration of heart tonics, easily digested nourishing food, no straining, the bowels regulated so as to move easily and catheterization for some days, complete quiet and good nursing are imperative. The patient should lose no sleep or be disturbed, and as soon as the stomach is able to bear iron it should be given.

112. **Butyric Acid.**—Salisbury has tried a new test for butyric acid in the stomach which was published by Knapp, of New York, in the *Medical Record*, Nov. 10, 1901, and finds that it is not sufficiently delicate for clinical use. Butyric acid, unless present in large quantities, does not interfere with titration of free HCl, by the use of dimethyl-amido-azo-benzene as an indicator. Butyric acid may be readily separated from the stomach contents by distillation in a side-neck test-tube, and may be recognized by its odor when contained in moderate quantities.

121.—This article has appeared elsewhere. See THE JOURNAL of February 1, ¶12, p. 351.

122. **Mastitis in Typhoid.**—This is apparently one of the rarest complications of typhoid, occurring much less frequently than orchitis, thyroiditis, or parotitis. McCrae, however, reports two cases and sums up his conclusions as follows: "1. Mastitis is a rare complication of typhoid fever, and usually occurs late in the attack. 2. It occurs in both sexes, and is apparently not associated with a functionating gland. 3. Both breasts are involved in about one-half of the cases. 4. Suppuration occurs in about half of the cases, and may be associated with the typhoid bacillus or staphylococcus. 5. It is of no special moment in the prognosis."

130. **Movable Kidney.**—Cartlege finds the right kidney much more susceptible to displacement than the left, and he thinks that 15 per cent. of all women who consult physicians for pelvic or abdominal disorders are thus affected. He thinks that tight lacing, chronic constipation and pregnancy, together with the great frequency of gall-bladder disease in women, are sufficient to account for the greater frequency in that sex. He also holds that movable kidney of the right side is frequently associated with chronic changes in the appendix. Whether this is entirely one of effect or should be considered a contributory cause he is unable to say. He has removed the appendix in every case of movable kidney operated on by his method of removing by one incision, which he describes. That there is a connection between movable kidney and chronic appendicitis he is inclined to believe. The restless kidney probably does adjacent structures more injury than it sustains itself. The descending colon and cecum are kept in a chronic state of congestion or irritation. In conclusion he describes his method of operating. The incision should begin an inch external to McBurney's point and be directed upward, outward

and backward for five inches. The tip of the twelfth rib is the objective point above. Separate aponeurosis and muscle fibers of the external oblique, split internal oblique with scissor point and thoroughly retract by retractors; open the peritoneum in the usual way through a small incision, and explore. Draw cecum, if not fixed, into the wound and close the peritoneum with running gut suture. Split the fibers of the transversalis and grasp in the same retractor as the internal oblique. At this stage of the operation dilatation by traction is the secret to easy access. Render the muscle patulous to succeed. In splitting the fibers of the internal oblique the rather large size of the last dorsal nerve will be observed. Next split the peritoneum from the transversalis fascia, beginning at the lower end of the incision. This is best done with a flat sponge. The split in this transversalis runs as far back as the thick aponeurosis known as the lumbar fascia. Place a wide retractor against the colon, draw it toward the median line, enter under the lower costal arch lifting the same. These retractors will keep muscles separated as well. We are now in a position to work with the greatest ease and accuracy with the patient in the dorsal position, though slightly inclined to the opposite side is best. With this control of the operating field, Cartledge believes it possible to suture the kidney so that it will remain stationary.

131. **Modern Small-Bore Projectiles.**—Butler's article describes the effects of bullets from the American army rifles, illustrated by cases showing the effects at short range in the soft tissues, which may be extreme even in the muscles. He has not found as much tendency to split up as with the old projectiles, little infection of the wound and lodgment rather exceptional at long range. Primary hemorrhage is more apt to occur than with the old weapons. In the explosive zone hard bone is often shattered in many pieces with the fragments scattered over large areas, but the bone area decreases as the range increases. There are many cases on record where perforation has occurred at medium and long range with apparently little damage and where the damage from perforating wound of the hard bone is often slight. Chest wounds are less dangerous with modern projectiles, but wounds of the abdominal viscera, especially the glandular organs, show an explosive effect often up to 1090 yards or more. Wounds of the cranium are often disastrous even at long range; at the extreme range of 2000 to 4000 yards, a hit is exceptional. He has not been able to get much data of such cases, but he is inclined to think that the wounds are sometimes very severe, owing to the so-called "tumbling" effect of the bullet.

143. **Drainage in Appendicitis.**—Westbrook takes up the subject of drainage and summarizes his conclusions as follows: "1. There are as yet no well recognized formulæ to guide the surgeon as to when to omit drainage in purulent collections attending appendicitis. 2. While it is true that the peritoneum may be relied upon to take care of a certain quantity of infectious material, we have no means of estimating in any individual case what that quantity may be. It is contrary to experience to expect the peritoneum to care for any large quantity of infection, otherwise we would never have to operate at all for appendicitis, or septic peritonitis. 3. An estimate of the individual's resistive powers to infection may be approximately made by the usual methods of consideration of the conditions of his lungs, kidneys, etc., his pulse and temperature, his previous health and talents, and perhaps, in some instances, by the amount of leucocytosis found on blood examination. But we have no means of placing over against this, at the time of operation, an accurate estimate of the amount and virulence of the infection with which the patient's resistive powers will have to contend. We can not estimate any individual susceptibility or immunity to infection which he may possess. 4. If the surgeon decides to omit drainage in any case of appendicitis with outlying infection, he must do so relying entirely on his personal ability to estimate the clinical facts in the case, and the nature and extent of the pathological process exposed at operation. Then, if his previous experience has brought him to the point of omitting drainage, he is warranted in doing so. 5. The majority of surgeons the world over still consider drainage necessary in all degrees of the class of cases under discussion, and that we must consider the safer teaching."

147.—See abstract in THE JOURNAL, xxxvii, p. 48.

153. **Pelvic Lesions in Insanity.**—This latest of Hobbs' papers on the subject gives the results of numerous operations in various forms of insanity with special reference to the effect on the mental disease. The operations included ovariotomy, replacement of the displaced uterus, cervical diseases, diseases of the uterine body and of the perineal body. His figures are certainly favorable to the results of operation, but most of the cases where recovery occurred were of the acute type and the exact relation of the operation to the recovery is not so evident. The most significant cases were the chronic mania and melancholia recoveries and the elements of time and recurrence are here to be considered. The paper is not so detailed in regard to this point as might be desired.

161.—This article has appeared elsewhere. See THE JOURNAL of January 25, ¶147, p. 281.

166. **Protargol.**—The use of protargol in eye disorders is advocated by Hiers, who reports cases and offers the following deductions from his experience: "1. On account of its non-coagulability of albumin and albuminous products, and the facility with which it can be indiscriminately combined with the alkalies and local ocular anodynes, protargol possesses a marked advantage over silver nitrate. 2. As contrasted with the latter in the therapy and prophylaxis of gonorrheal ophthalmia, protargol does not undergo chemical changes nor decomposition; and is advantageous in that its action is non-caustic and unirritating. 3. The harmlessness of protargol renders its application easy and safe. 4. Protargol, while exercising remarkable penetrative power, will not stain the mucous membrane nor sear the tissues. 5. Its penetrability enables it the better to undermine and eradicate diseased conditions; which faculty, in a measure, is denied nitrate of silver, on account of the pseudo-membrane eventuating from its application. 6. For general prophylaxis simple washing of the eyes with protargol is sufficient; but where gonorrheal infection has been proven, or is suspected, instillation is indicated. 7. As a routine measure, washing the eyes with protargol should be made obligatory in private obstetrical practice. 8. Protargol should be advocated and substituted for silver nitrate in clinics. It possesses all of the advantages with none of the disadvantages of its silver salt. 9. Protargol is reliable, safe, certain and quick in the therapeutics of ophthalmia neonatorum and trachoma if used in sufficient strength and with proper frequency. 10. In my practice and experience it has manifested itself the remedy par excellence in those conditions in which its employment has been indicated."

168.—This article has appeared elsewhere. See THE JOURNAL of January 4, title 50, p. 61.

170.—This article has appeared in THE JOURNAL, xxxvii, p. 1605.

171.—See abstract in THE JOURNAL, xxxvii, p. 1554.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below.

British Medical Journal (London), February 1.

1 Total Extirpation of the Prostate for Radical Cure of Enlargement of That Organ. P. J. Freyer.
2 Ten Cases of Movable Kidney. J. Scott Riddell.
3 *Methods of Incising, Searching, and Suturing the Kidney. Howard A. Kelly.
4 *Clinical Observations in the Treatment of Severe "Stammering" Bladder and Urethra. E. Hurry Fenwick.
5 Partial Nephrectomy. B. G. A. Moynihan.
6 Recurrent Carcinoma Treated by the Roentgen Rays. G. B. Ferguson.

The Lancet (London), February 1.

7 *The Heart of the Child. D. B. Lees.
8 *Notes Concerning a Native Remedy for Blackwater Fever. D. R. O'Sullivan-Beare.
9 On the Ultra-violet Light from a Rapid Oscillation High-tension Arc, for the Treatment of Skin Diseases. Hugh Walsham.
10 Two Cases of Uterine Cancer Successfully Treated with Cancroin. Albert Adamkiewicz.
11 *The Trial, Execution, Necropsy, and Mental Status of Leon F. Czolgosz. (To be continued.) Carlos F. MacDonald. With Report of Postmortem Examination. E. A. Spitzka.

12 The After-Histories of 100 Cases of Supravaginal Hysterectomy for Fibroids. G. Crewdson Thomas.
13 A Case of Recurrent Sarcoma with Apparently Spontaneous Cure and Gradual Shrinking of the Tumor. A. Laurie Watson.

Bulletin Gen. de Therapeutique (Paris), January 8.

14 Medical Treatment of Pulmonary Tuberculosis—Action of Thiocol. E. Vogt.—"Apropos du traitement médical de la tuberculose pulmonaire—Action de thiocol."
15 *Ovarian Opotherapy. P. Dalché.—"Opothérapie ovarienne."

Bulletin Med. de Quebec, January,

16 *Pneumonic Meningitis. T. Savary.—"Meningite pneumonique."
17 *Efficacy of Apomorphin in Hysteria, Hystero-epilepsy and Epilepsy. E. V. Faucher.—"De l'apomorphine contre les attaques d'hystérie, d'hystéro-épilepsie et d'épilepsie."

Bulletin de la Soc. Med. des Hop. (Paris), January 23.

18 Cytodiagnosis of Cerobrospinal Fluid in 45 Cases of Nervous and Mental Affections. Nageotte.—"Cytodiagnostic du liquide cephalo-rachidien dans 45 cas d'affections nerveuses et mentales."

Correspondenzblatt f. Schweizer Aerzte (Basle), January 1.

19 *Treatment of Tuberculosis with Cinnamic Acid. T. Heusser.—"Die Behandlung der Tuberkulose mit Zimmtsäure (Hetol)."

Gazette des Hopitaux (Paris), January 18, 21 and 23.

20 The Kidney in Consumptives. E. Guihal.—"Le rein des tuberculeux."
21 Prescaphoid and transcuboid Amputation. H. Morestin.—"Amputation prescaphoidienne et transcuboidienne."
22 Different Methods of Treating Malaria. Lemanski.—"Les diverses méthodes de traitement du paludisme."
23 New Apparatus for Re-educating the Movements of the Legs. A. Riche.—"Quelques nouveaux appareils pour la ré-éducation des mouvements des membres inferieurs."
24 Mercury Benzoate in Treatment of Syphilis. Desesquelle.—"Le benzoate de mercure en injections hypodermiques dans le traitement de la syphilis."
25 Treatment of Muco-Membranous Entero-Colitis. G. Lyon.—"De l'entéro-colite muco-membraneuse et de son traitement."
26 *Inoculation of Cancer in Animals. Mayet.—"Inoculation du cancer aux animaux."
27 Proportions between Heat Emitted and Surface of Body. H. Bordier.—"Determination exp. du rapport qui existe entre la quantité de chaleur dégagée par l'homme et la surface du corps."
28 *Exaggeration of Knee-Jerk in Asthma. Moncorgé.—"De l'exagération des réflexes rotuliens chez les asthmatiques."
29 Rôle of Nephritis in Production of Hypertrophy of the Heart. Mayet.—"Demonstration exp. du rôle des néphrites dans la production de l'hypertrophie du coeur."

Presse Medicale (Paris), January 22.

30 *Hemolytic Substances and Their Clinical Application. P. E. Launois. "Des substances hémolysantes dans leurs applications à la clinique."
31 Four Cases of Cancer of the Esophagus Cured by Cancroin. A. Adamkiewicz.—"Quatre cas de guérison du cancer de l'œsophage par la cancroine."
32 Principles and Indications for Massage. M. Marchais.—"Le massage dans la pratique courante—Principes et indications."
33 Plehn's Method of Treating Dysentery. R. Romme.—"Le traitement de la dysenterie d'après M. Plehn."

Revue Mens. des Mal. de l'Enfance (Paris), January.

34 Are Women Losing the Power to Nurse Their Children? A. B. Marfan.—"Le pouvoir d'allaiter a-t-il diminué chez les femmes de nos jours?"
35 *The Amyloiytic Ferment in the Blood Serum of Children in Health and Disease. P. Nobécourt.—"Le ferment amyloiytique du sérum sanguin chez l'enfant normal et chez l'enfant malade."
36 *Peculiar Form of Osteo-Arthritis of the Hip in Children. G. Nové-Josserand.—"Variété particulière d'une osteo-arthrite de la hanche chez les enfants."

Semaine Medicale (Paris), January 22.

37 *Pleural Effusions in Persons with Heart Disease. E. Barié.—"Les épanchements pleuraux chez les cardiaques."

Deutsche Med. Wochenschrift (Leipsic), January 23.

38 *Study of Glycolysis. R. Lépine.—"Zur Lehre von der Glykolyse."
39 Progressive Chronic Chorea. A. Westphal.—"Ueber Chorea chronica progressiva."
40 *Blackwater Fever in Quartan Fever Acquired in Poland and Germany. M. Otto.—"Ein in unseren Breiten erworbener Fall von Schwarzwasserfieber bei Quartana."
41 *Plague. W. Kolle and E. Martini.—"Ueber Pest." (Concluded from No. 3.)
42 Results of Vital Blood Staining. H. Rosin.—"Ergebnisse vitaler Blutfärbung."
43 *Determination of Quality of Human Milk by the Microscope. Friedmann.—"Die Beurtheilung der Qualität der Frauenmilch nach ihrem mikroskopischen Bilde."
44 *Committee for Cancer Research.—"Comité für Krebsforschung."

Muenchener Med. Wochenschrift, January 28.

45 *One Hundred Cases of Spinal Tropa-Cocainization. K. Schwarz.—"Erfahrungen ueber 100 medullare Tropakokain-Analgesien."
46 Auscultation of the Respiratory Apparatus. O. Rosenbach.—"Ueber die Auskultation des Respirationsapparates."
47 Peculiar Odor of Breath in Incipient Tuberculosis. O. Rosenbach.—"Ueber einen eigenth. Geruch der Expirationsluft im Beginn der Lungenphthise."
48 *Thymus Gland and Rachitis. F. Mendel.—"Thymusdrüse und Rachitis."
49 Addison's Disease. J. Bruno.—"Ueber Morbus Addisonii."
50 Relations between Angiomata and Carcinomata. Gebele.—"Ueber Angiome u. ihren Zusammenhang mit Karzinomen."
51 Scientific Hydrotherapy and "Water Cures." Von Vogl.—"Ueber wissenschaftliche Hydrotherapie u. Wasserkuren." (Concluded from No. 3.)

Wiener Klin. Wochenschrift, January 23.

52 The Point Attacked by the Tetanus Toxin. L. Zupnik.—"Ueber den Angriffspunkt des Tetanusgiftes."
53 *Experimental Study of Influence of Fractures on Circulation and Temperature. R. Fibich.—"Exp. Beitrag z. Theorie von der Einwirkung der Knochenbrüche auf den Kreislauf und die Temperatur."

Wiener Med. Wochenschrift, January 4.

54 The Tuberculosis Question. F. Hueppe.—"Standpunkte und Aufgaben in der Tuberculosefrage."
55 *Sham Operations in Case of Imaginary Affections. M. Schächter.—"Scheinoperationen bei eingebildeten Krankheiten."

Zeitschrift f. Diaet. und Phys. Therapie (Leipsic), January.

56 Invalids' Restaurant and Catering Establishment. Frau A. vom Rath.—"Die öffentliche Krankenküche."
57 Therapeutic Portable Lamp. S. Bang.—"Eine therap. Handlampe mit gekuehlten Eisenelektroden." Illustrated.
58 Ettiology and Physical Treatment of Hemiplegic Contraction. P. Lazarus.—"Ueber die Theorie der hemiplegischen Kontraktion und deren phys. Behandlung."
59 Simple Contrivance to Prevent Flexion-Pronation Contracture of the Arm. W. Alexander.—"Eine einfache Vorrichtung zur Verhütung der Flexionspronationskontraktur des Armes."

Zeitschrift f. Hyg. u. Inf. (Leipsic), xxxix, 1, 1902.

60 *Differentiating Study of Bacteria with Capsules. P. Claermont.—"Differentialdiagnostische Untersuchungen ueber Kapselbakterien."
61 Checking Hemolysis by Salts. Markl.—"Ueber Hemmung der Hämolyse durch Salze."
62 *Length of Life of Disease Germs in Droplets and Dust. F. Kirstein.—"Ueber die Dauer der Lebensfähigkeit von Krankheitserregern in der Form feinster Tröpfchen und Stäubchen."
63 *Study of Natural Immunity and Bactericidal Sera. F. Wechsberg.—"Zur Lehre von der nat. Immunität u. über bakt. Heilsera."

Zeitschrift f. Klin. Med. (Berlin), xliv, 3 and 4, 1902.

64 Experimental Study of Excitability of the Cortex After Exclusion of Cerebrospinal Tracts. M. Rothmann.—"Die Erregbarkeit der Extremitätenregion der Hirnrinde nach Ausschaltung cerebrospinaler Bahnen."
65 Analysis of Irregular Pulse. K. F. Wenckebach.—"Zur Analyse des unregelmässigen Pulses."
66 *Methylene Blue Test of Renal Function. K. Assfalg.—"Die Verwendung des Methylenblau z. Prüfung der Nierenfunction."
67 Enlargement of Hands and Feet on Neuritic Basis. H. Hirschfeld.—"Ueber Vergrösserung der Hände u. Füsse auf neuritischer Grundlage."
68 *Micrococcus Catarrhalis as Disease Germ. A. Ghon.—"Der Mikrococcus catarrhalis als Krankheitserreger."
69 *Clinical Study of Pathology and Treatment of Idiopathic Enlargement of Esophagus. H. Strauss.—"Klin. Beitraege z. Path. u. Therapie der sogenannten idiopathischen Oesophagus-Erweiterung."
70 *Myelitis consecutive to Acute Diffuse Encephalomyelitis. L. Huismann.—"Ueber Myelitis im Anschluss an einen Fall von Encephalomyelitis disseminata acuta."
71 *Source and Solubility of Oxalic Acid Eliminated in Urine. G. Klemperer and F. Tritschler.—"Untersuchungen ueber Herkunft u. Löslichkeit der im Urin ausgeschiedenen Oxalsäure."

Tidsskrift f. d. Norske Laegefor. (Christiana), January 15.

72 *Treatment of Tuberculosis. T. C. Wyller.—"Om tuberkulosens behandlung."

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3. **Surgery of the Kidney.**—The importance of the knowledge of anatomy of the kidney itself is first mentioned by Kelly, who confines his article to the methods of incising, searching and suturing of that organ in case of calculous extraction. The presence or absence of stone can be determined with tolerable accuracy by the *x*-ray, which has simplified modern surgery. He finds the ureteral catheter of value in two ways. In the first place, before the operation the catheter is passed up the ureter into the pelvis of the kidney, which is then thoroughly irrigated and washed out by letting water flow into it from the funnel, in this way distending the pelvis. The water then escapes into the bladder, and out into a receptacle through a urethral catheter. Boracic acid or a weak carbolic solution can be run through the kidney, in this way washing away the pus and rendering the surfaces relatively clean.

The second use of the catheter is, after washing out the pelvis, to leave it *in situ*, and then to expose the kidney by lumbar incision. Before incising the kidney, however, fluid is forced rapidly into the renal pelvis, so as to distend the pelvis and cause the kidney to swell up, making prominent certain surface landmarks as guides for correct incision. If the kidney is grasped in the full hand during the distension the exact position of the calices can be detected, as it alternately swells and collapses as the fluid is forced in. Any sacculation or local thinness of the cortex is also made evident, and the incision is best made there. In normal kidneys this distension is almost imperceptible on the convex surface, but with calculi present the antero-posterior diameter is sometimes increased 1.5 c.c. Lobules of the kidney are made prominent and the fibrous vascular septa between them are readily distinguished when the kidney is distended; there is less injury to the cortex from incision in this distended condition and the gush of water at once serves to show the entry into the pelvis. Sometimes a small stone is washed out in this way, saving further trouble. The irrigation of the pelvis through the incision by means of the renal catheter can be kept up as long as the catheter is kept in and the wound remains open. The most important point in the surgical treatment of renal calculus is the locality for the incision. Broedel's researches have shown that the vascularization of most kidneys is provided for by two arterial systems which are completely separated by the renal pelvis. There is a major system carrying three-fourths of the arterial blood providing for the anterior and part of the posterior half of the kidney, and a minor system carrying one-fourth of the arterial blood providing for the remaining posterior portion. These facts are illustrated by drawings in the article. The nearer the surgeon makes his incision in the line which divides these completely separated systems, the less blood is lost, whereas if he strikes the major vessels the hemorrhage may be frightful. The greater the distension of pelvis and calices the wider the separation of these systems; while in the normal undistended pelvis there is rarely more space than a few millimeters between the anterior and posterior vascular planes; in distended pelves these are not infrequently parted by as much as 2 cm. or even more. If the kidney is examined attentively it will always be found to be divided up into irregular areas (the bases of the pyramids) the size of the end of a thumb. These areas are bounded by lighter colored lines which are often slightly depressed. These whitish lines represent the columns of Bertini, which extend up between the pyramids forming the framework which supports and carries the vessels. The white lines come together in a longitudinal white line on the anterior surface, which he proposes to call Broedel's white line. When the white line dividing the pyramids can not be found readily, their position is often marked by little groups of stellate vessels. The best place then to incise the kidney is down through the lateral portion of the posterior pyramids between the anterior and posterior vascular trees. The worst possible incision is the one which follows the course or wounds largely the vascular column found in cortical septa between the pyramids. In order, then, to make a correct incision one must cut parallel to Broedel's line and parallel to the posterior surface of the kidney, leaving about three-fifths of the kidney anterior and two-fifths posterior to the incision. The cut must be extended in a parallel direction to the posterior surface and not angling toward the center of the kidney as one would naturally incline to do. Through such an incision both anterior and posterior systems of calices can be readily explored. In about two-thirds of the kidneys these landmarks will prove reliable, but there may be an abnormal arrangement, slipping the least vascular plane forward so that it comes to lie in the plane of the median section or may extend even into the anterior portion of the kidney. Conditions of this kind, as a rule, are recognized: 1. By the form of the kidney, which shows Broedel's longitudinal white line not on the anterior surface but further back, as well as by the bulging of the posterior surface of the kidney, which is much flattened in normal cases. 2. By the arrangement of the large arterial trunks at the hilum. If the palpating finger feels as many vessels entering the parenchyma anterior to the pelvis as posteriorly, this would be an indication for an incision through the middle of the lateral convex border. If there are even more vessels posteriorly to the pelvis than anteriorly, which is extremely rare, the least vascular plane would be found in the anterior third of the kidney. To reiterate, the incision should pass parallel to the longitudinal white line, 1 cm. away from it and on the same side of the kidney where the palpating finger feels the lesser number of vessels, in the majority of cases on the posterior surface, but occasionally anteriorly. Where the renal pelvis is not divided, after extracting the stone, the remaining calices are explored with a steel curved handle attached to a blunt knife which would at once reveal the presence of even a small stone by the grating sensation conveyed. If a stone is found the blunt curved handle may be pushed up into the calyx and the incision made down through the prominent part of the corresponding pyramid, and the stone extracted in this way through a small additional incision if it can not be lifted out with forceps through the original incision. Kelly has often, in fact, resorted to two incisions in the upper and lower poles separately, so as to spare the median portion of the kidney. It is best, as a rule, not to try to remove the stone primarily from the pelvis of the kidney without incising the renal tissue proper. He would resort to this only where the stone is known to be a small one, and there is no inflammation or edema of the pelvis, and where the pelvis can be incised, exposed and sutured without much difficulty. In closing the kidney wound we have three sets of sutures which may be used to advantage. One of fine catgut placed between the calices including the fat and fibrous tissues without involving the mucous surfaces, thus approximating the pelvis. The second series and the most valuable as devised by Dr. Hunner and Mr. Broedel are one or two series of mattress sutures, introduced with a straight, slightly-blunted needle, extending through the entire substance of the kidney. These give a perfect and sufficient control over bleeding. Finally, for perfect accuracy the capsule may be closed by a continuous catgut suture.

4. **"Stammering" of the Bladder.**—The symptom sometimes complained of by young males that urination is sometimes impossible in the presence of anyone is accounted for by Fenwick by the tonic spasm of the compressor urethræ, and the cure of the trouble is a section of that muscle. He gives his reasons for believing this the cause, which seem conclusive, and that the muscles around the neck of the bladder are not responsible. In some cases a stricture induces a spasm, and division of the stricture cures it. Fenwick says it is perhaps true that the relief often afforded by perineal section in deep-lying strictures with spasm is due not so much to drainage of the bladder as to division of the compressor urethræ. He would go further and say that some of the misery of tubercular ulceration of the bladder is induced by reflex spasm, and much of the relief supposed to result from temporary perineal drainage for this disease is due to division of the compressor urethræ. In some cases of vesical irritability in women which are relieved by exploration of the bladder with the finger, the beneficial result is due to overstretching the sphincter muscle, the analogue of the male compressor urethræ. In cases of prostatitis, where there is delay before micturition and a sense of obstruction, these are due to inflammatory swellings in the neighborhood of the urethral orifice of the bladder, and are in no way connected with true stammering, or benefited by section of the compressor. The same holds true in senile prostatic enlargement.

7. **The Heart of the Child.**—The importance of the study of the heart of the child is dwelt upon by Lees, who says it can be examined by the same methods as employed for the adult. He gives directions how to go about this without alarming the patient. Percussion will not be troublesome or objected to if done lightly with the fingers only. What the child allows is exactly what the physician ought to use. First, however, warm your hand and lay it gently over the precordial region to feel the cardiac impulse, its strength and whether it is localized or diffused. It gives information as to the strength of the left ventricle. Then shift the hand to the epigastrium and notice whether any impulse of the right ven-

tricle is to be felt there. If so, there is some congenital malformation or some disease of the lungs or left heart. Then pass the hand over the hepatic region and see whether it meets the resistance of an enlarged liver, and try very gently to feel its edge. Passing then to percussion, what we really want to know is the exact size of the heart. We can determine very little by physical examination as regards the size of the left auricle and only an approximate opinion can be formed as to the size of the right ventricle, but that of the left ventricle and of the right auricle can usually be determined with considerable accuracy. Use a terminal phalanx of the finger of the left hand for the pleximeter, pressing it gently but firmly on the spot and let no other part of the hand touch the chest wall, thus avoiding conduction of resonance from elsewhere. First select a spot in the mid-axilla and percuss here with the lightest possible stroke, then gradually shift your percussed finger towards the sternum and you will readily notice a change of note when the border of the heart is reached. Though the left lung apparently overlaps the heart it is thin and airless, and does not require deep or heavy percussion to recognize it. Expect to find the cardiac margin a little to the left of the position of the impulse. The left border of the cardiac dulness in health extends a little to the left of the position of the impulse and when dilated this may amount to a finger-breadth or more. Next determine whether the dulness extends to the left of the nipple itself and if so to what amount in the nipple acromial line. Two points on the border of the left ventricle thus determined, the line connecting these should correspond to this border. Next determine the size of the right auricle. Dulness due to it may always be detected in the fourth right intercostal space. In the third intercostal space the resonance should extend to the sternum and in the fifth space the hepatic dulness alters the note, but in the fourth space the right auricle dulness is present for about one finger-breadth in an adult and rather less in a child. In dilatation it may extend to two or three finger-breadths. When the dilatation is very great it may amount to three finger-breadths in the fourth space, one and a half in the third, and may even be detected in the second. The correct determination of the size of the right auricle is a matter of the greatest importance and indicates the necessity for leeches to relieve this condition, but nothing is so universally neglected. By this time you are ready for auscultation and the child is more ready for you and is not alarmed by the production of an instrument. In auscultating the heart of a child, be on the look-out for murmurs due to congenital malformation. Some of these are very peculiar and puzzling. The most frequent is a systolic murmur, loudest at or just below the junction of the left fourth costal cartilage with the sternum, probably often due to an incomplete cardiac septum. The next most common perhaps is a systolic murmur over the pulmonary artery, indicating obstruction there. Congenital murmurs are systolic in time; a presystolic or diastolic congenital murmur is exceedingly rare. Congenital malformations of the heart mainly affect its right side, which is most active during intra-uterine life. After birth this is less liable to disease than the left, though the tricuspid valve does not always entirely escape in rheumatism. But the most important affection of the right heart is secondary to active or extensive chronic disease of the lungs or to disease of the left heart, and careful watch must be kept on the amount of distension of the right auricle. The author speaks particularly of the importance of this and attention to it every day, especially in cases of pneumonia, and the need of local blood extraction with leeches for relief. Pallor of the face and smallness of the pulse are not necessarily contra-indications. These symptoms will improve after the right side has been relieved. In acute bronchitis, chronic bronchitis with an acute exacerbation, in whooping cough with its mixture of collapse, broncho-pneumonia, and emphysema, and in asthmatic attacks we should always notice the amount of distension of the right auricle, also in all cases of disease of the left heart especially after rheumatism. If dilatation of the right auricle is rapid, dyspnea and cardiac depression will probably be present, but the more gradual increase will only be revealed by percussion. As time passes the heart accommodates itself and comparative comfort may be attained while heart dilatation still exists, but the condition is one of unstable equilibrium and another rheumatic attack may turn the scale. With this trouble the liver enlarges and if you find it down to the umbilicus or lower and the amount of urine passed be decreasing there is no time to be lost. Prompt venesection or leeching may be resorted to and the hypodermic use of strychnin to restore compensation. He calls attention before leaving the right side of the heart to a systolic murmur over the tricuspid region which is not very uncommon in healthy children and does not indicate any organic disease. On the left side of the heart the auricle is inaccessible, but the enlargement of the left ventricle, which is probably shared to some extent by the right, can be easily determined by careful percussion, and the strength of the ventricular muscle can be fairly estimated. It is very important in children out of health to get a clear idea of the left border of the cardiac dulness. In normal children this left border is usually distinctly internal to the nipple line. It may sometimes reach to but rarely goes beyond it. If we find the left limit one-half to one finger-breadth external to the nipple line, as is frequently the case, the matter is not unimportant. The cardiac muscle of the child is specially susceptible to poisons and the most characteristic instance of this is in diphtheria, which is much more fatal in children owing to the disease of the heart muscle. If the dilatation after diphtheria amounts to two finger-breadths to the left of the nipple line the case should be very carefully watched, as the danger is great. If it is only one finger-breadth we must bear in mind that it may suddenly increase. Enlargement of the ventricle always occurs in influenza, but the danger here seems less in children than in adults. In rheumatism the toxic effect on the heart does not seem to be so great. In typhoid, tuberculosis, debility and anemia as well as in renal disease, dilatation of the left ventricle is common and may be due to toxemia. The same is true in chorea, where with rheumatism it does not seem to be entirely the result of toxemia; but in rheumatism we are dealing with inflammation of the child's most important organ, probably caused by the local presence of a pernicious micro-organism. As for remedies he remarks that sodium salicylate in adequate doses seems to be distinctly antagonistic to rheumatic processes. The child bears salicylate well, and it rarely causes any troublesome symptoms. Sodium bicarbonate may be given along with it to advantage. Leeches are useful in repressing cardiac inflammation and local ice-bag applications. Ice is undoubtedly depressing to the normal heart, but when preceded by leeches and used with care it is the reverse to the rheumatic heart. Digitalis is of little service in rheumatic cardiac inflammation. Its value comes later when the inflammation has subsided and the mechanical effects manifest themselves. In ventricular dilatation and enfeeblement caused by toxemia leeches and ice are inapplicable. The hypodermic injection of strychnia is here mentioned as of value. Iron is of some use, but in diphtheria Lees relies mainly on the subcutaneous injection of atropin when danger threatens.

8. **Blackwater Fever.**—O'Sullivan-Beare gives his observations on the native treatment of blackwater fever with a decoction made from the root of a plant which he finds in East Africa and which has been described by E. L. Holmes as a new species, the Cassia beareana. He has had a fluid extract made of it with which he has had the best effects, but the native method of using it is also effective; it seems to be non-toxic and harmless in large doses. The fluid extract he has given in doses of one fluid dram well diluted in water every two hours at first and afterwards at longer intervals. The natives use a decoction made from the root boiled in water for one-half hour and give it freely whenever the patient feels like drinking, either hot or cold. It seems from his results to be a valuable remedy in this condition.

11.—This article has appeared elsewhere. See THE JOURNAL of January 8, ¶9 and ¶10, p. 202.

15. **Ovarian Opotherapy.**—Dalché observed a polyuria, or at least a marked increase in the amount of urine, in patients taking ovarian extract. There was also an absolute and relative increase in the total of phosphoric acid, and the propor-

tion of urea was increased in 50 per cent. of the cases. The normal proportions of uric and phosphoric acid were re-established in two out of the six cases whose metabolism was studied in detail. He has had extensive experience with ovarian medication, and has found it effective in forestalling or curing many derangements of function. He also noticed that chronic arthritis deformans frequently followed dysmenorrhea, amenorrhea, metrorrhagia or pregnancy, as well as the menopause. This "asthenic gout of elderly women," as it has been called, suggests the possibility that it may be due to dystrophy of the ovaries and lack of function. He consequently administered ovarian extract in such cases. The deformed joints did not diminish in size under this treatment, but they did not increase, and the patients unanimously announced that the pains had decreased. The nearer the menopause and the more recent the onset of the arthritis, the greater the relief from the pain. An interesting fact noted was the marked improvement in the case of a young man under this treatment. This suggests that possibly the ovary and the testicle may contain a similar alkaloid.

16. **Pneumonic Meningitis.**—Savary says that he has never observed a case recover from pneumonic meningitis. A sudden rise in temperature after defervescence may be the only symptom to betray the meningitis at first. There are no special characteristics to differentiate the pneumococcus meningitis from others. It remains latent in about half the cases of pneumonia or at least is masked by the symptoms of the latter. Headache, delirium and immobility of the back of the neck are the principal symptoms, or the affection may run rapidly through the entire syndrome of a tubercular meningitis. Netter observed only 4 recoveries in 65 cases of the affection; death occurred between the first and the fourth day. Recovery is apt to be protracted. Hensinger witnessed a case in which it was not complete until after five weeks. Others have witnessed permanent nervous troubles left as the relics of the meningitis —epileptiform seizures, paralysis or contractures. Recovery is more liable to occur when the meningitis precedes the pneumonia. The development of the latter is frequently accompanied by the subsidence of the former. Treatment can be only symptomatic, cold local applications, leeches behind the ears, laxative water every two hours, blisters in the neck region and in case of great depression, camphor per rectum, one part to 60 parts of some emulsion.

17. **Efficacy of Apomorphin in Hysteria and Epilepsy.**—Faucher recommends one-tenth to one-fifteenth of a grain of apomorphin as a speedy means of arresting an attack of hysteria or hystero-epilepsy and even an epileptic seizure. The patient's attention is diverted by the injection, then follows the vomiting and the subsequent depression, the whole soothing and relaxing the nervous system and controlling the seizure. It is an actual specific against hysteria, he observes, whatever form it may assume. He describes a number of cases of supposed apoplexy, etc., promptly cured in a few minutes after the injection. The epileptic is usually inclined to eat too much, and the seizure frequently follows an abundant meal. The indications, therefore, are to relieve the digestive system and reduce the congestion of the nerve centers, both of which are promptly accomplished by apomorphin. The seizure is arrested and is not followed by others. Of course, apomorphin is by no means a specific against epilepsy, but it is a valuable means of controlling the attacks of certain neuroses in whose presence the physician is too ready to consider himself powerless.

19. **Treatment of Tuberculosis with Cinnamic Acid.**—Heusser of Davos Platz has previously published 22 cases of tuberculosis treated with cinnamic acid or hetol, and now adds 60 more to the list. The results have convinced him that this method of treating tuberculosis, within the limits established by Landerer, is entirely harmless and is more effective in inducing cicatrization and healing in cases of complicated tuberculosis than any other remedy yet recommended for the purpose.

26. **Inoculation of Cancer in Animals.**—Mayet discusses the results of an extensive series of experiments on animals inoculated with cancerous matter. The tests on dogs and rabbits were always negative, but neoplastic lesions were induced in a number of white rats, when they had been inoculated merely with the soluble products of the cancer.

28. **Exaggeration of Knee-Jerk in Asthma.**—Moncorge examined 141 patients with asthma and found the knee-jerk very much exaggerated in 18 of the 66 men and in 29 of the 75 women. The knee-jerk was exaggerated to a certain degree in 30 of the men and in 34 of the women. It was normal in only 18 of the men and 12 of the women.

30. **Clinical Application of Hemolytic Substances.**—Laumois announces as the result of much experimental and clinical research, that normal human blood-corpuscles may be destroyed by certain organic fluids derived from diseased subjects, such as the serum, ascitic fluid or pleural effusion. On the other hand, the corpuscles of the persons from whom the fluid was originally derived are peculiarly resistant. The fluids contain, therefore, an alexin, a "sensibilisatrice" for human corpuscles and an antihemolysin. The hemolytic substance is variously called alexin by Buchner, cytase by Metchnikoff and complement by Ehrlich. The substance existing in the organic fluid which favors the action of the alexin and renders it elective, is called the sensibilisatrice in France, or the hemolytic antibody, preventive substance, immune body or amboceptor by Ehrlich, philocytase or fixateur by Metchnikoff, and desmon and copula by others. All these various terms merely represent the hemolytic substance and the other substance in the serum which favors its action and renders it elective. Still other substances in the organic fluids oppose the hemolytic action and hence are called antihemolysins.

35. **Amylolytic Ferment in Children.**—Nobécourt describes his researches which established the fact of the frequent presence of an active amylolytic ferment in the blood serum even immediately after birth. This ferment is unquestionably secreted by the organism of the child and is not derived from the mother. There is no appreciable difference between this ferment found in the serum of the breast-child and of the child fed with cow's or goat's milk.

36. **Peculiar Form of Osteo-Arthritis of Hip in Children.**—Nové-Josserand has observed a number of cases of children between 5 and 15 who began to limp a little, with occasional pain in the hip-joint. Abduction was slightly restricted. These symptoms subside spontaneously or after a few days' rest. They might be explained by a sudden congestion occurring in the midst of unusually rapid growth, but this explanation does not suffice for the occasional cases in which the symptoms persist during several weeks or months. A tubercular affection can be excluded on account of the final complete disappearance of all symptoms without much treatment. In a case described in detail, radioscopy disclosed a strange condition, which, without destroying the bones, affected them locally with a transient alteration, manifested in the enlargement at the periphery, and permeability to the x-rays in the center. Restitution was complete after a few months, and the functions and shadows of the joint returned to normal except for a slight hyperostosis of the supra-cotyloid region. The head is also a trifle thicker than in the other hip. The slight coxa vara noticed has entirely disappeared and the neck has resumed its normal slope. Immobilization was applied at intervals during a few months, and recovery has been complete for more than a year.

37. **Pleuritic Effusions in Persons with Heart Disease.**—Barié states that he noticed pleurisy with effusion in 13 out of 126 cases of heart disease. Hydrothorax can be differentiated from pleural effusion by its bilateral development, usually accompanying other tardy complications of organic heart trouble. A true pleural effusion is usually unilateral and on the right side, and even although small in amount, is liable to cause marked dyspnea. The pleurisy is, as a rule, of an inflammatory nature, the result of irritation of the pleura from the subjacent hemorrhagic infarct. The cytologic formula is like that of pneumococcus pleurisy, polynucleated and epithelial

cells predominating. The presence of polynucleated cells may disclose some preceding unsuspected hemorrhagic infarct. The pleurisy may not be directly dependent on the heart disease. It may be induced by some intercurrent attack of acute articular rheumatism. In a case of this kind in his service, the patient recovered under sodium salicylate in less than a month, and the rheumatism and pleurisy disappeared together. This rheumatic pleurisy is characterized by its sudden onset, by the extent of the painful area and by a tendency to invade the pleura on the other side in turn. In other cases, the same infectious or toxic influences which cause the heart disease, may induce pleurisy, as in case of malignant endocarditis. The pleuritic manifestations are merely the effects on the pleura of the same poison which causes the endocarditis. Hydrothorax is a very serious complication of heart disease, but the prognosis of pleurisy under the same conditions is more favorable, under appropriate treatment, simple and purely medical, purgatives, diuretics and revulsion. If the dyspnea persist and transient hyposystolic accidents develop, thoracocentesis may be necessary even with a small amount of fluid in the pleural cavity. Hydrothorax requires general treatment of the underlying asystoly.

38. **Glycolysis.**—Lépine states that recent researches have fully confirmed his previous announcements that the tissue of the pancreas is endowed with the property of destroying substances which otherwise prevent glycolysis in the tissues. This property is distinct from the internal secretion of the pancreas. He has succeeded in extracting a crystallizable substance from the urine of diabetic and other patients, which prevents glycolysis. This substance becomes destroyed in its passage through the vessels of the living pancreas in dogs and guinea-pigs.

40. **Hemoglobinuria After Quinin.**—Otto reports a case of quartan fever acquired in Poland, which was treated, after it had lasted four weeks, by a single dose of 50 cg. of quinin after the patient had returned to Hamburg. This was followed immediately by a typical attack of blackwater fever with hemoglobinuria. This is the first case on record, he remarks, which demonstrates that tropical conditions are not indispensable to the development of blackwater fever, and also that hemoglobinuria is liable to occur in the course of a quartan malaria. There was no idiosyncrasy to quinin as the patient had previously taken it without disturbance.

41. **The Plague.**—This article is issued from the Institute for Infectious Diseases in Berlin, and is thus an official contribution to the further study of the plague. It proclaims that the recent advances in our knowledge of the means of dissemination of the plague by rats renders a new international conference necessary, as the rulings of the conference of 1897 are now obsolete in many respects. The quarantine regulations adopted by the conference need revision, and the introduction of international measures against rats on ships and in harbor towns. Rats are to the spread of the plague what water is to cholera, and the successful results of prophylactic measures when the rats have been consciously or unconsciously destroyed or driven away, are the most important acquisitions to our campaign against the plague. In Egypt the rats were not directly attacked as the attempt was considered absolutely hopeless, but the disinfection of the houses, the destruction of accumulated garbage, etc., and the saturation of the houses with sublimate, had the unexpected effect of driving the rats away and keeping them away from human habitations, and it was thus possible to control and stamp out the plague. The principal prophylactic measure, however, is to destroy all the rats on a ship leaving an infected port. A single infected rat escaping to shore is infinitely more dangerous to the community than plague patients, as contagion from the latter can almost certainly be controlled. Ships can be cleared of rats by poisonous gases without injury to the cargo. The ship *Pergamon* recently arrived at Hamburg from an infected port with dead rats but no cases of plague on board. Prompt extermination of the rats before unloading prevented any infection of the crew or workmen unloading the ship. The Danysz bacillus is uncertain in its results, but may be found useful in places where poisons can not be used, as in grain warehouses, etc. Protective vaccination or serum treatment is useful for persons directly exposed to the plague, physicians, nurses, etc., but can scarcely be applied on a large scale. In fact all the statistics collected to date in respect to their practical value, are unreliable or else compiled under such varying conditions as to exclude all comparative conclusions. Even in the recent tests at Cape Town the number inoculated, 10,000, was so small in proportion to the uninoculated, 120,000, that it is impossible to draw conclusive deductions from the results. Anti-plague serum promises well, and if suitable improved media and methods of cultivation for the plague bacillus can be discovered, which will produce in young cultures a soluble, powerful toxin, serum treatment may prove a valuable adjuvant in the war against the plague.

43. **Microscopic Examination of Human Milk.**—Friedmann has found that when nurslings are not thriving on breast milk, the microscope invariably shows a degenerated condition of the milk. Under normal conditions the fat globules are seen under the microscope to be of three sizes, small, large and medium. The medium and small ones are most numerous, and about 10 to 20 of the large are found in the microscopic field with a magnifying power of 400 or 500. If the proportion of large globules is more than this, the milk is harder to digest, but if the child can accomplish it, he thrives exceptionally on this milk. When the small-sized globules predominate, the milk is poor in quality and the child usually suffers from chronic dyspepsia, especially when the globules are very small and deformed or disintegrated. The globules usually crowd close together. This examination of the milk with the microscope is sufficient for all practical purposes and affords important indications for the physician. He should adopt it as a routine measure before recommending a wet nurse.

44. **Committee for Cancer Research.**—At the meeting November 14, it was decided to organize another collective inquiry among the surgeons of Germany to elicit new statistics in regard to the ultimate results of operations for mammary cancer. The main address was on the dissemination of cancer in Germany. It is to be published later in full. Hansemann is studying the cases of cancer discovered for the first time at the autopsy. He has already found that 131 or 18.42 per cent. of 711 cases of cancer had not been diagnosed during life. Von Leyden replied to the suggestion that the assumed increase in the number of cases of cancer is due to improved methods of diagnosis, that this can not be accepted as there has been little improvement in this respect in the last few decades. The question of the occurrence of cancer among the natives of Africa was discussed. The impression prevailed that it did occur but no definite statistics were offered.

45. **One Hundred Cases of Spinal Tropa-Cocainization.**—Schwarz does not include the cases in which he gave more or less than the dose of tropa-cocain which he finally decided was the most suitable. At this dose he never failed to induce analgesia reaching to the umbilicus and was thus able to perform every operation required below this zone, without pain or any disturbing after-effects. In a very few cases, after-effects were evident, but so brief and so mild that there is no comparison between them and those liable to follow the use of cocain. He concludes by proclaiming that he prefers spinal tropa-cocainization for appropriate cases to any kind of inhalation narcosis. He follows Tuffier's technique, and injects 5 cg. of tropa-cocain dissolved in 1 c.c. of water, then elevates the pelvis for ten minutes, after which he lowers the patient to the horizontal plane. He uses 6 cg. if the operation is to be on the hip-joint, but never more than 4 cg. if the patient is under 17 years of age. The analgesia in a few rare cases extended to the head. It always lasted one or two hours for the legs, genitalia, perineum and anus, but sometimes subsided in thirty minutes during operations for hernia, requiring a few whiffs of some narcotic to complete the operation. He does not recommend spinal analgesia for laparotomies, as, although the analgesia of the skin is complete, the patients are disturbed by the pulling and stretching of the intestines. The analgesia induced by tropa-cocain is perfect, and the few rare after-effects noted are merely the rudiments of what is liable to follow cocainiza-

tion. When headache does occur it is so trifling that the patients do not mention it unless questioned. After-vomiting was observed in only two cases, during the operation in only two, and nausea in two. The temperature did not rise above 38.2 C. in any instance. The youngest subject was 12, the oldest 78. Decrepit subjects with senile gangrene bore this method of analgesia with remarkable tolerance.

48. **Thymus Gland and Rachitis.**—Mendel calls attention to the great similarity between the symptoms exhibited by dogs whose thymus glands have been removed, and those observed in rachitis in children. He also suggests that the hypertrophy of the spleen noticed in rachitis may be due to its vicariously substituting the insufficient thymus gland. Friedleben found in examining the thymus gland in the cadavers of 300 children, from infancy to puberty, that the gland was abnormally small or abnormally large and hard in every case in which rachitis was certain or probable. In the cases of pronounced rachitis the gland was much atrophied. Reasoning from these premises, Mettenheimer has applied the extract of the thymus gland to the treatment of rachitis, following the example of thyroid treatment of myxedema. The success was not so striking as in the latter, but this was probably due to inadequate dosage. Mendel has been treating more than 100 rachitic children with thymus during the last five years, each child receiving as many grams of fresh gland substance as he was months old, or 6 to 12 tabloids a day. Even after exceptionally large doses, no by-effects were evident in any case, demonstrating the absolute harmlessness of thymus treatment. The rachitic process was favorably influenced in many cases. The functional disturbances were most rapidly and effectively controlled; the hyperidrosis diminished in two or three weeks; the sleep became more tranquil, the general appearance brighter and livelier. The symptoms recurred when the treatment was suspended for any cause, and vanished again on its resumption. Spasm of the glottis occurred less and less frequently until it finally ceased entirely. In one case in which a thorough course of phosphorus had not produced the slightest benefit, the spasms ceased completely after a few days administration of thymus tabloids crumbled in a tablespoonful of milk, and further treatment for three months banished all the other rachitic symptoms. The enlarged spleen usually commenced to subside after two or three weeks and gradually returned completely to normal size, as did also the distended abdomen. In one case the treatment was suspended for a fortnight on account of a stomatitis, and the spleen began to enlarge again. The rachitic alterations in the bones gradually returned to normal, dentition was promoted, the fontanelles grew smaller, and everything indicates that the skeleton is resuming normal conditions. When the rachitic process is definitely arrested, he found that 6 to 12 tabloids, according to the age of the child, twice a week instead of every day as at first, were sufficient to promote retrogression, although months were required for the complete cure. This method of treatment of rachitis aims to cure the rachitic symptoms by substituting the gland extract for the defective internal secretion, and to improve the general health. This improvement brings about a gradual restitution of the gland to normal, and by this means the definite cure of the tendency to rachitis. For this reason, if the thymus gland is irremediably injured by tuberculosis or congenital syphilis, it is impossible to anticipate a cure from it.

53. **Influence of Fractures on Circulation and Respiration.**—Fibich states that the temperature almost invariably rose in dogs after a subcutaneous fracture of a bone, especially when there was friction between the ends. The pulse was also accelerated for a moment, followed by a brief period of abnormally slow pulse. The latter was not noticed in curarized dogs. The higher temperature is frequently preceded by a depression of the temperature. All these phenomena occur so rapidly and so soon after the trauma that they are evidently independent of re-absorption or infection, and must be due to nervous influences.

55. **Sham Operations in Case of Imaginary Affections.**—Schächter relates a number of interesting experiences in regard to neurasthenic patients who clamored for an operation on account of some fancied deformity or lesion. The results were always unfortunate when their requests were complied with, as the morbid fancy was not cured and always recurred in the same or another form. Reassuring, harmless suggestion is alone applicable in such cases, and sham operations should always be avoided for numerous and cogent reasons, which he enumerates.

60. **Differentiating Study of Bacteria with Capsules.**—Claermont's researches on bacteria with capsules are summarized in tabulated form, including the results of the inoculation of mice, guinea-pigs and rabbits, the bio-chemical properties of the bacteria and the peculiarities of their cultures. He identifies the "ozena bacillus" with Friedlaender's pneumonia bacillus, but distinguishes two varieties. One is found exclusively in the secretions of ozena and is not pathogenic for guinea-pigs. The other is seldom found in ozena secretions, but occurs frequently in the most diverse morbid processes and is pathogenic for guinea-pigs. The scleroma bacillus is another species. The bacillus lactis aerogenes should be differentiated from the pneumonia bacillus.

62. **Length of Life of Disease Germs in Droplets and Dust.**—Gaffky found that microbes retain their vitality much longer in dimly lighted than in sunny rooms. This may be one reason why disease germs flourish better in winter than in summer, owing to the lesser hours of sunlight. He points out that influenza epidemics have never occurred in Germany except when the weather has been long cloudy. The vitality is also directly proportional to the size of the particle of dust or moisture. The germ dies more rapidly the finer the particles. In his tests with droplets such as are expelled in speaking, sneezing or coughing, he found that the bacillus prodigiosus and the typhoid bacillus retained their vitality 24 hours in daylight; the diphtheria bacillus 24 to 48 hours in daylight and 5 days in a cellar; the tubercle bacillus 5 days in daylight and 22 days in a cellar; the fowl cholera bacillus 10 hours in daylight and 24 hours in the cellar; the staphylococcus pyogenes aureus 8 to 10 days in daylight and 35 days in the cellar; the streptococcus longus 10 days in daylight and 38 days in the cellar, and anthrax spores 10 weeks in daylight, and at least 3 months in the cellar.

63. **Natural Immunity and Bactericidal Sera.**—Wechsberg reviews the latest researches on this question and emphasizes the fact that serum therapy for man must be established on the principle that the "amboceptors" in the therapeutic serum must find their appropriate complements in the patient's serum. He agrees with Ehrlich that the non-success which as yet has attended the employment of typhoid and cholera serum may be due to the fact that the serum is derived from species of animals which are so distantly removed from man. The amboceptors of the animal serum can not find their special complements in human serum.

66. **Methylene Blue Test of Function of Kidneys.**—Assfalg has employed this test in 46 cases of various affections. He concludes from his experience that this test, with other clinical indications, may prove of some service to the surgeon, but the individual physiologic and pathologic conditions must also be taken into account. It is impossible to formulate an anatomic diagnosis from it any more than from the determination of the amount of hydrochloric acid in the stomach, but it aids in determining the functional capacity of the kidney. Even nervous disturbances in the organism are liable to influence the elimination of the blue.

68. **The Micrococcus Catarrhalis.**—Ghon presents evidence to prove that this microbe is pathogenic at times. It is able to set up a simple bronchitis without the co-operation of other microbes, or even a lobular or lobar pneumonia, with severe general symptoms. The infection it induces has no characteristic features. It resembles most closely that from the influenza bacillus and pneumococcus, and it is frequently associated with or precedes their invasion.

69. **Idiopathic Enlargement of the Esophagus.**—Strauss points out that analysis of the seventy cases of bag-shaped

enlargement of the esophagus which have been published, shows that it began to develop in childhood, at puberty or under 40. It is therefore probably the result of some constitutional anomaly. Gastroptosis was noticed in 3 cases and probably was not sought in all. The stomach was vertical in some instances. The pressure of the aorta probably first starts the morbid process, inducing some slight erosion or ulceration of the wall of the esophagus. This in turn may induce spasmodic contraction of the cardia by reflex action, and by this means a depression is formed which in time develops into an actual diverticulum. He describes two cases in detail with the autopsy findings in one. In the other case the diverticulum had developed in childhood, and was referred to a trauma. The patient was able to force the food down into his stomach by drinking copiously of effervescing beer or pressing on the thorax when the lungs were inflated. The sound could not be introduced except when the esophagus was inflated at the same time. By introducing two sounds, one a flexible spiral sound with a thread fastened to the tip and passing through an eyelet in the side, thus enabling the lower portion of the sound to be drawn up into a curve at will, it was possible to locate the outlines of the diverticulum with the fluoroscope. The curved sound pushed the other sound around as it was rotated. He determined the size by adapting for the purpose a long, narrow rubber balloon such as Turck uses for his "pneumatic gymnastics" of the stomach. This was introduced empty and then inflated when in the diverticulum until the patient began to experience discomfort. By this means it was possible to estimate the size of the cavity much more accurately than by the usual method of filling and emptying it of fluid. It is applicable even when the cardia is quite permeable. He tested the permeability of the cardia by administering carmin by the mouth and watching for its appearance in the urine. Another aid in diagnosing the diverticulum was the difference in the noise when air was blown through a sound at different levels in the esophagus. In the attempt to distinguish between the contents of the stomach and of the diverticulum, the presence of ferment, sugar, and the degree of acidity are important points. Differentiation is difficult in case of gastric apepsia, but traces of some ferment will decide the question. Sugar speaks for the esophagus and against a gastric origin, but this test is unreliable after a meal of carbohydrates in case of motor insufficiency. The total acidity can only be accepted as testimony in case of gastric apepsia when there is motor insufficiency. In such a case he found the stomach acidity 40 to 95 while that in the diverticulum was 10 to 25.

70. **Myelitis Consecutive to Acute Disseminated Encephalomyelitis.**—Huismann proclaims that every myelitis is induced by bacteria and describes a personal case in which every feature indicated this origin. He remarks that other causes may create a predisposition, but they are unable to induce a myelitis without bacterial invasion. The predisposition to myelitis consists in a congenital or acquired alteration of the walls of the spinal vessels which favors thrombosis. Acute myelitis resembles embolism in its course, while the chronic form is more like primary arterial thrombosis. Acute myelitis either heals with sclerosis or becomes progressively chronic. In many cases the affection assumes the latter character from the start, but a predisposition is required in this case, while on the other hand, acute myelitis can develop without a preliminary disposition.

71. **Source and Solubility of Oxalic Acid Eliminated in Urine.**—Klemperer announces that the most favorable conditions for keeping the oxalates dissolved are afforded by the presence of at least 20 mg. of magnesia in 100 c.c. of urine and no more than 20 mg. of lime. The proportion of magnesia in the urine is not much modified by ingestion of salts of magnesia, but even this slight increase is sufficient to keep the oxalates dissolved. The food should contain little oxalic acid or lime and much magnesia. Spinach, cocoa and tea should be avoided, also foods containing lime, especially milk, eggs and fresh vegetables. The prolonged administration of 2 gm. of magnesium sulphate a day will aid in keeping the oxalates in the urine constantly dissolved. The most favorable proportions are when the lime is to the magnesia as 1 to .8, 1 or 1.2, with 20 mg. of magnesia to 100 c.c. of urine.

72. **Treatment of Tuberculosis.**—Wyller believes in increasing the resistance of the organism in childhood by massage and gymnastic exercises to strengthen the chest, done by, or under the eye of, an expert. After losing two children in his own family from tubercular affections, he has strengthened in this way the other members of the family, who had each a phthisical habitus, and has witnessed the throwing off of this predisposition.

Queries and Minor Notes.

CONTAGIOUSNESS OF EARLY SMALLPOX.

WEST SUPERIOR, WIS., Feb. 12, 1902.

To the Editor:—The Health Department of this city has been subjected to criticism on account of keeping secret the occurrence of several cases of smallpox in one of our best hotels, by a morning paper, which concludes as follows: "Prominent citizens are complaining that the public are not being kept thoroughly familiar with the true smallpox situation in the city, so that the infected places can be avoided. They believe that the citizens can not act in conjunction with the health officials unless they have a correct understanding of the situation, and feel that the department has erred in keeping the situation secret." A statement of our Health Commissioner explains, in an evening paper, the situation, a copy of which I enclose: "The patient was taken sick four days ago and had the ordinary fever symptoms attending many such diseases; on the forenoon of the fourth day the characteristic symptoms of smallpox appeared and he was immediately removed. The disease is not contagious during that period. . . ."

It is something entirely new to me that smallpox should not be transferable from a patient, who is sick already for four days with so-called "ordinary fever symptoms." I beg the editor to inform me, kindly, if facts are known which corroborate this statement.

F. HERB, M.D.

ANS.—It is not safe to count on the non-contagion of smallpox at any stage of the disease from the initial fever to the very final disappearance of all relics. There are abundant facts to show that it may be contagious before a complete outbreak, though there is no doubt that the danger is greatest after the stage of pustulation and scabbing has begun. In a public institution recently a case was received and almost immediately diagnosed and removed before the eruption had fully broken out. Nevertheless in the course of time a number of cases developed without any other known cause. It is possible that an officer may, to avoid excessive alarm on the part of the public, say things to minimize the danger which he does not himself believe. Whether this is advisable or not, is questionable; but it certainly is not right to say that any case of smallpox in any stage is safe as regards communicability. Some authorities have even gone so far as to say that even in the incubation stage there is a possibility of conveying the disease, but there is not much evidence to show that there is danger before some symptoms of the disease begin to manifest themselves.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia; with the Collaboration of Drs. John B. Murphy, Chicago; Alexander D. Blackader, Montreal; H. C. Wood, Philadelphia; T. M. Rotch, Boston; E. Landolt, Paris; Thomas G. Morton, Philadelphia; Charles H. Reed, Philadelphia; J. W. Ballantyne, Edinburgh, and John Harold, London, with Regular Correspondents in Montreal, London, Paris, Leipsic and Vienna. Volume IV, Eleventh Series, 1902. Cloth. Pp. 302. Price, $2.00. Philadelphia: J. B. Lippincott Co. 1902.

THE STANDARD MEDICAL DIRECTORY OF NORTH AMERICA, consisting of Twelve Parts, Including Directory of Physicians of North America, Medical Colleges, Medical Service of the United States, Medical Societies, Medical Practice Acts, Medical Publications (Including Books and Periodicals), Mineral Springs, Drugs and Medicines, Medical and Surgical Products, Manufacturers and Life Insurance Companies. Handsomely Bound in Red Buckram, 824 Pages, Imperial Octavo. Price, $10.00. Chicago: G. P. Engelhard & Co.

ON THE ALTERATIONS PRODUCED IN THE LARGE INTESTINES OF DOGS BY THE AMEBA COLI, BY HEAT, AND BY VARIOUS CHEMIC

SUBSTANCES, with Notes on the Anatomy and Histology of the Viscus. By H. F. Harris, M.D., Atlanta, Ga. A Research Carried on under the Auspices of the Nathan L. Hatfield Prize Committee of the College of Physicians of Philadelphia. Paper. Pp. 143. Philadelphia: Printed for the College. 1901.

A MANUAL OF OPHTHALMOSCOPY. For Students and General Practitioners. By J. E. Jennings, M.D. (University of Pennsylvania), Author of "Color-Vision and Color-Blindness," etc.; formerly Clinical Assistant, Royal London Ophthalmic Hospital, London. With 95 Illustrations and 1 Colored Plate. Large 12mo. Price, $1.25 net. Philadelphia: Published by P. Blakiston's Son & Co. 1902.

DIRECTIONS FOR CLASS WORK IN PRACTICAL PHYSIOLOGY. Elementary Physiology of Muscle and Nerve and of the Vascular and Nervous Systems. By E. A. Schaeffer, LL.D., F.R.S., Professor of Physiology in the University of Edinburgh. With Diagrams. Cloth. Pp. 76. Price, $1.00. New York: Longmans, Green & Co. 1901.

MARKET MILK: A PLAN FOR ITS IMPROVEMENT. By R. A. Pearson, M.S., Assistant Chief of Dairy Division, U. S. Department of Agriculture, Bureau of Animal Industry. Paper. Pp. 193. Reprint from the Seventh Annual Report of the Bureau of Animal Industry. 1900.

OUTLINES OF ANATOMY. A Guide to the Methodic Study of the Human Body in the Dissecting Room. By Edmund W. Holmes, A.B., M.D., Demonstrator of Anatomy, University of Pennsylvania. Second Edition. Cloth. Pp. 185. Lancaster, Pa.: New Era Printing Co. 1902.

SIXTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE SPRINGFIELD STATE HOSPITAL of the State of Maryland, Sykesville, Md., to His Excellency the Governor of Maryland. Oct. 1, 1901. Paper. Pp. 41. Baltimore: Sun Book and Job Printing Office. 1902.

CLINIQUE DES MALADIES DU SYSTEME NERVEUX, HOSPICE DE LA SALPETRIERE (1897-1898, 1898-1899). Cinquième and Quatrième Serie. Paper. Pp. 606 and 678, respectively. Price, 70 francs. Paris: Octave Doin. 1900 and 1901.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1899-1900. Volume II. Cloth. Pp. 1368. Washington: Government Printing Office. 1901.

PRINCIPLES AND PRACTICE OF OPERATIVE DENTISTRY. By John Sayre Marshall, M.D. (Syr. Univ.), Dental Surgeon U. S. A. Cloth. Pp. 635. Price, $5.00. Philadelphia and London: J. B. Lippincott Co. 1901.

MOSQUITO BRIGADES and How to Organize Them. By Ronald Ross, F.R.C.S., D.P.H., F.R.S., Walter Meyers Lecturer in Tropical Medicine. Cloth. Pp. 100. Price, $1.05. New York: Longmans, Green & Co. 1902.

ANATOMY AND PHYSIOLOGY OF THE EYE, with Hints for the Preservation of the Eyesight. By J. Frederick Herbert, M.D. Second Edition. Cloth. Pp. 68. Price, $1.00. Philadelphia: P. Blakiston's Son & Co.

HYGIENE FOR STUDENTS. By Edward F. Willoughby, M.D. Lond., Diploma in State Medicine of the London University. Cloth. Pp. 563. Price, $1.25. London and New York: The Macmillan Co. 1901.

REPORTS OF THE SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN. Volume I. Session of 1900-1901. Cloth. Pp. 237. Price, $5.00. Philadelphia: P. Blakiston's Son & Co.

THE PERVERTS. By William Lee Howard, M.D. Cloth. Pp. 388. Price, $1.50. New York: G. W. Dillingham.

New Patents.

Patents of interest to physicians, etc., Jan. 14, 21 and 28:

691,143. Hernial truss. Richard Hummel, New York City.
691,270. Water bandage. Charles H. Jones, Tempe, Ariz.
691,290. Tank for medicating water. Charles W. Perkins, St. Louis, Mo.
691,295. Exercising apparatus. Franklin Schneider, Cleveland, Ohio.
691,224. Invalid bed-rest. John F. Wilkins, Norfolk, Va.
35,580. Design, hot-water bag closure. Christian W. Meinecke, Jersesy City, N. J.
691,698. Vaginal syringe. Richard H. Eddy and J. B. Johnston, Providence, R. I.
691,732. Device for therapeutic application of smoke. Philip J. Schreiber, Toledo, Ohio.
691,681. Asepfic preparation from pancreas and producing same. Wilhelm Weber, Stolberg II, Germany.
691,687. Capsule. Robert B. Wilson, Woodhaven, N. Y.
692,043. Suspensory. Joel U. Adams, Cincinnati, Ohio.
692,102. Nitrocellulose. David Bachrach, Baltimore, Md.
692,139. Making hydrogen dioxid. P. L. Hulin, Clavaux, par Riouperoux, France.
692,061. Douche bench. Thomas F. McCullough, Memphis, Tenn.
692,166. Medicine carrier. Jakob Schaffer, New York City.
691,881. Registering faucet for syrup bottles. Francis E. Thompson and F. N. Young, Boston, Mass.

The Public Service.

Army Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the fourteen days ended Feb. 6, 1902:

Surgeon P. C. Kalloch, granted leave of absence for fourteen days from February 5.

Surgeon J. J. Kinyoun, department approval of June 28, 1901, granting leave of absence for four months, amended so that said leave shall be for one month and twenty-one days.

P. A. Surgeon A. R. Thomas, to proceed to London, England, for special temporary duty.

Asst.-Surgeon Taliaferro Clark, granted leave of absence on account of sickness, for fourteen days from January 16.

A. A. Surgeon J. T. Bullard, granted leave of absence for twenty-five days from February 1.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for two days.

A. A. Surgeon R. T. Walker, granted leave of absence for four days from February 18.

Hospital Steward E. S. Maguire, granted leave of absence for thirty days from February 5.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Feb. 8, 1902:

Asst.-Surgeon F. M. Furlong, ordered to Naval Hospital, Norfolk, Va., instead of to the *Topeka*, as previously ordered.

Asst.-Surgeon W. H. Ulsh detached from the *Annapolis*, and ordered to the Naval Hospital, Mare Island, for treatment.

Medical Inspector J. R. Waggener, detached from the *Constellation* and to duty at the Marine Recruiting Rendezvous, Boston, Mass.

Surgeon J. F. Urie, detached from the Marine Recruiting Rendezvous, Boston, Mass., and ordered to the Naval Dispensary, Washington, D. C.

Surgeon L. W. Spratling, ordered to duty at the Naval Hospital, Portsmouth, N. H.

P. A. Surgeon S. G. Evans, detached from duty at the Naval Hospital, Portsmouth, N. H., and ordered to the Pensacola Navy Yard.

Surgeon F. J. B. Cordeiro, detached from the Pensacola Navy Yard, and ordered to the *Constellation*.

Asst.-Surgeon C. M. Oman, ordered to the Naval Hospital, New York, for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 7, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, Jan. 18-25, 5 cases; San Francisco, Jan. 19-26, 14 cases.
Illinois: Jan. 25-Feb. 1, Belleville, 1 case; Chicago, 5 cases; Danville, 1 case; Galesburg, 2 cases.
Indiana: Crawfordsville, Jan. 18-Feb. 1, 14 cases.
Iowa: Clinton, Jan. 26-Feb. 2, 6 cases.
Kentucky: Covington, Jan. 26-Feb. 2, 6 cases.
Louisiana: New Orleans, Jan. 25-Feb. 1, 4 cases, 1 death.
Massachusetts: Boston, Jan. 25-Feb. 1, 47 cases, 12 deaths; Brookline, Jan. 18-25, 1 case; Cambridge, Jan. 25-Feb. 1, 5 cases; Chicopee, Jan. 18-25, 1 case; Malden, Jan. 25-Feb. 1, 1 case; New Bedford, Jan. 25-Feb. 1, 5 cases; Somerville, Jan. 25-Feb. 1, 1 case; Waltham, Jan. 25-Feb. 1, 1 case; Woburn, Jan. 25-Feb. 1, 1 death.
Michigan: Ann Arbor, Jan. 11-18, 1 case; Detroit, Jan. 25-Feb. 1, 6 cases; Ludington, Jan. 26-Feb. 2, 1 case.
Minnesota: Minneapolis, Jan. 18-25, 23 cases.
Montana: Butte, Jan. 12-26, 9 cases.
Nebraska: Omaha, Jan. 25-Feb. 1, 51 cases; South Omaha, Jan. 24-31, 172 cases.
New Jersey: Camden, Jan. 25-Feb. 1, 7 cases; Jersey City, Jan. 25-Feb. 1, 25 cases, 1 death; Newark, Jan. 24-Feb. 2, 40 cases, 3 deaths.
New York: Jan. 25-Feb. 1, Binghamton, 3 cases; New York, 42 cases, 15 deaths.
Ohio: Cincinnati, Jan. 24-31, 16 cases, 1 death; Cleveland, Jan. 25-Feb. 1, 3 cases; Middletown, Jan. 25-Feb. 1, 2 cases; Toledo, Jan. 25-Feb. 1, 3 cases.
Pennsylvania: Auburn, Nov. 16-Jan. 25, 48 cases, 1 death; McKeesport, Jan. 25-Feb. 1, 1 case; Norristown, Jan. 25-Feb. 1, 1 case; Philadelphia, Jan. 25-Feb. 1, 73 cases, 13 deaths; Pittsburg, Jan. 25-Feb. 1, 1 case; Williamsport, Jan. 25-Feb. 1, 2 cases.
Rhode Island: Providence, Jan. 25-Feb. 1, 1 death.
South Carolina: Jan. 18-25, Charleston, 2 cases; Greenville, 1 case.
South Dakota: Sioux Falls, Jan. 24-Feb. 2, 4 cases.
Tennessee: Memphis, Jan. 25-Feb. 1, 12 cases.
Washington: Tacoma, Jan. 19-26, 3 cases.
Wisconsin: Green Bay, Jan. 24-Feb. 2, 10 cases; Milwaukee, Jan. 25-Feb. 1, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Para, Nov. 1-Dec. 31, 25 cases, 2 deaths.
Colombia: Cartagena, Jan. 13-19, 2 deaths; Panama, Jan. 20-27, 25 cases.
France: Paris, Jan. 11-18, 7 deaths.
Great Britain: Bristol, Jan. 4-11, 1 case, 1 death; Liverpool, Jan. 11-18, 3 cases; London, Jan. 11-18, 877 cases, 60 deaths.
India: Bombay, Dec. 31-Jan. 7, 1 death; Karachi, Dec. 29-Jan. 5, 8 cases, 2 deaths; Madras, Dec. 14-20, 3 deaths.
Italy: Naples, Jan. 11-18, 15 cases, 3 deaths.
Russia: St. Petersburg, Jan. 4-11, 5 cases, 1 death.
Uruguay: Montevideo, Nov. 8-Dec. 7, 268 cases, 26 deaths.

YELLOW FEVER.

Brazil: Para, Oct. 1-Dec. 31, 24 deaths.
Dutch Guiana: Paramaribo, Jan. 9, 2 cases suspect.
Mexico: Vera Cruz, Jan. 18-25, 1 case.

CHOLERA.

India: Bombay, Dec. 31-Jan. 7, 1 death; Calcutta, Dec. 28-Jan. 4, 33 deaths; Madras, Dec. 14-20, 4 deaths.

PLAGUE.

China: Hongkong, Dec. 14-21, 1 case.
India: Bombay, Dec. 31-Jan. 7, 213 deaths; Calcutta, Dec. 28-Jan. 4, 22 deaths; Karachi, Dec. 29-Jan. 5, 31 cases, 26 deaths.